THE CANNING TRADE

THE Journal OF THE Canning AND Allied Industries

ESTABLISHED 1878

SINCE 1878—THE CANNED FOODS AUTHORITY

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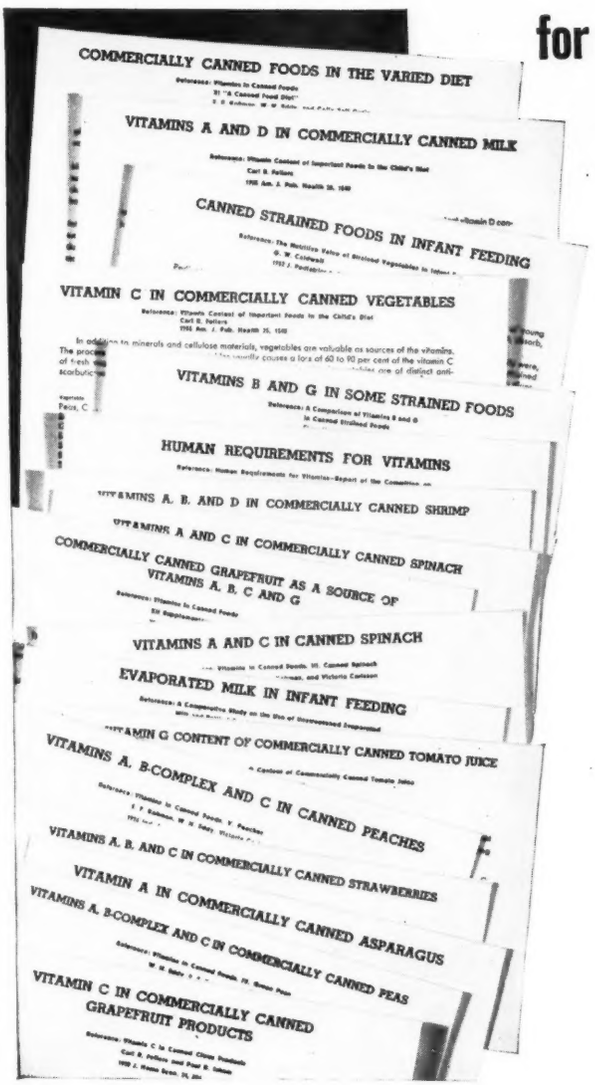
WEEKLY NEWS OF THE INDUSTRY — MARKETS — QUOTATIONS

A NEW and IMPORTANT SERVICE


COMMERCIALLY CANNED FOODS IN THE VARIED DIET
VITAMINS A AND D IN COMMERCIALLY CANNED MILK
CANNED STRAINED FOODS IN INFANT FEEDING
VITAMIN C IN COMMERCIALLY CANNED VEGETABLES
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HUMAN REQUIREMENTS FOR VITAMINS
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VITAMIN A IN COMMERCIALLY CANNED ASPARAGUS
VITAMINS A, B-COMPLEX AND C IN COMMERCIALLY CANNED PEAS
VITAMIN C IN COMMERCIALLY CANNED GRAPEFRUIT PRODUCTS

for PHYSICIANS, DENTISTS, HEALTH OFFICERS and HOME ECONOMISTS . . .

A vast amount of nutritional research has been conducted in independent and university laboratories by hundreds of investigators. Much of it has been devoted to the importance of vitamins in general . . . and some to vitamins in canned foods specifically.

As published in the Scientific magazines, this research forms the basis of modern practice in human nutrition.

We have, therefore, assembled the reports made by scientists on vitamins in canned foods and are printing abstracts of them on file cards . . . of the same size and type which physicians use for all their professional work.

This information is sent to the professions in answer to their questions regarding nutritive values of canned foods. These numerous inquiries from every part of the country are the result of our extensive educational program in medical, dental and home economics magazines.

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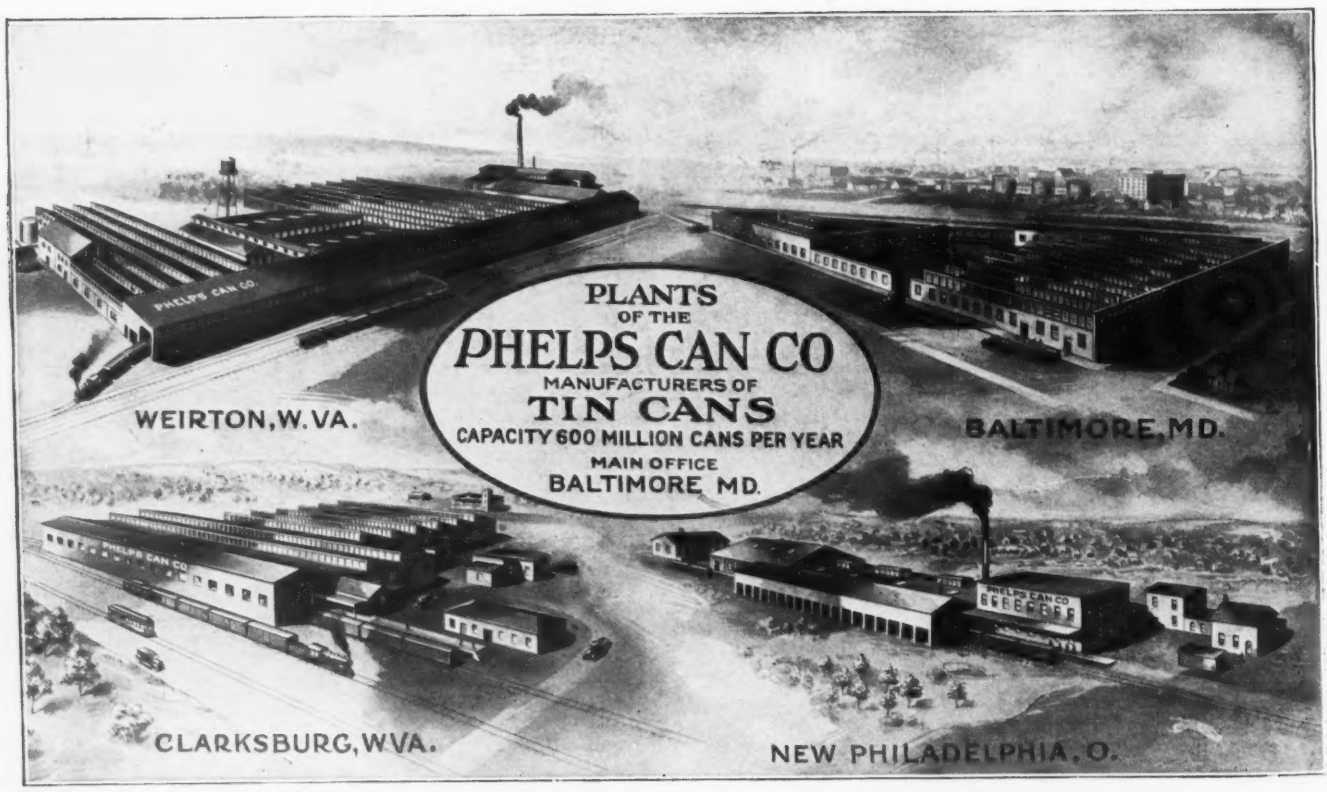

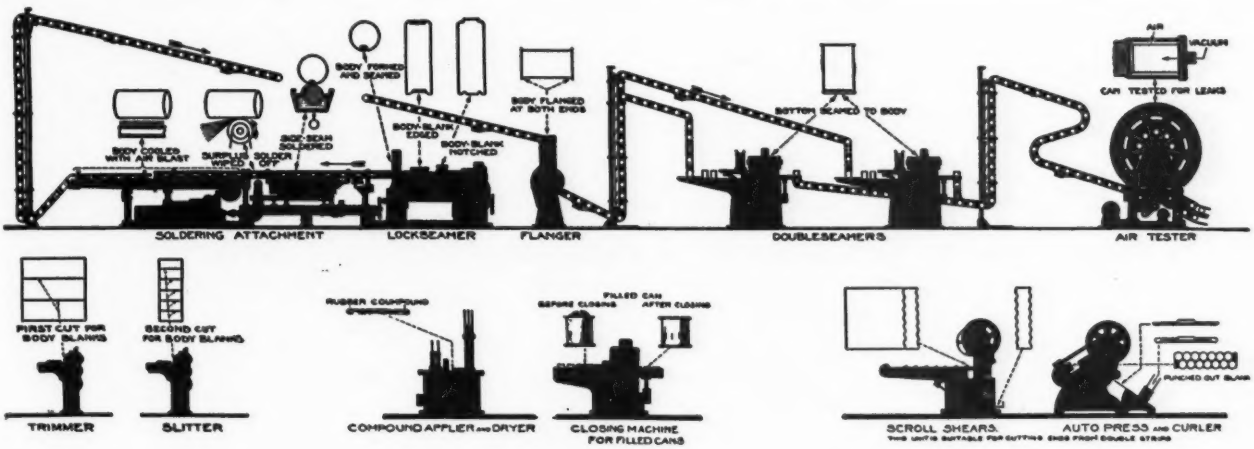

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THE CANNING TRADE

Established 1878

The Journal of the CANNING and Allied Industries

EDITORIALS

PARTNERSHIP WITH GOD—Many of you probably heard, but we wish we could remember, the little poem read by Major Bowes on his last Sunday morning Capitol Theatre radio program. In effect it said that man plows, and seeds and cultivates, but God sends the rain, the sunshine and the warmth, to bring to fruitfulness his efforts; "what a lucky man to be in partnership with God."

At this Easter season there seems to be a happy hint in that, for not alone the farmer, but all mankind in whatever calling, should be "in partnership with God." And it has seemed to us that this year there has been a greater, a more widespread, reference to the need for all of us to return to first principles, by our governors and representatives of various sorts, than ever before. Easter is the season of hope, the restoration to the human race of a hope eternal, and which had about completely faded out from the world at the time of the first Easter. Had there been no Easter—the rising of Jesus Christ from the dead—there would have been no Christianity, and consequently no end to slavery, no surcease to the black agony and despair, none of the great blessings that have been heaped upon the world since that first Easter morning. He told his listeners plainly that His enemies would put Him to death on the Cross, but that He would rise again on the third day. Only God could have raised Lazarus from the dead, and certianly only God could have raised Himself from the dead. And so the world has believed, and "lucky the man to be in partnership with God."

As Man that first Easter is more than nineteen hundred years away, but in His Divinity, which knows no time, it is as near as the present moment. And God seems to delight in reminding mortals of this. If you read last week's "Time", under Miscallany, you read about a man in Los Angeles who, convicted of murdering his wife, and sentenced to life, cried: "If I am guilty of this horrible crime, may God strike me dead before I get to my cell," and before he reached his cell at San Quentin Prison he suffered a heart attack, fell dead!

And in the same column of the same issue, a woman, this time down in Alabama, defending her fugitive son as a hit-and-run driver who had killed an old negro man, said: "I hope to die if my son killed that negro." Two days later she died. Caught, the son confessed the crime. God will not be mocked! Today, as well as in those olden days about which so many of you read in the Old Testament, and believe, but who, when He shows His hand now, as above, say it is a mere coincidence.

Happy Easter!

CHAPMAN BILL HAS CHANCE—The House now has the new pure food bill under consideration, and the latest word from it is that the Copeland bill as passed by the Senate is not acceptable to it, but on the contrary it prefers the bill offered by Representative Chapman and will use it as a basis for the bill the House will pass. There are not wanting those in high places who have pronounced the Copeland bill as weakening the original pure food law instead of strengthening it, and it is known that the great consumer organizations are demanding a law that will give them more and better protection, and they have the ear of the House. You know that the Chapman bill has that all-important requirement, the Name on the Label. The Government wants this, and the consumers, as a whole and through their highly influential clubs, are demanding it, because they know that it is due to the absence of this requirement that the junk of all kinds can find its way to market. Plugging that hole will rid the market of all the foods and drugs which cause most of the troubles for the food law enforcement officers, and remove the basis of all the swindles that are perpetrated on the buying public. Under the present law foods and drugs can be offered without any name; and there is no way to reach the "fake" labels used to work off on the market the seconds and worse, and what we mean by this is the long array of canners' labels "Distributed by," or, even worse still, the dummy canning companies named after brands, or place of cannery, or old long-out-of-business concerns, and which few if any other than the canners using them, know who owns them, or what they stand for. All of this is a deception on the public, just as it is a species of deception for the distributor to pose as the canner, and why our lawmakers go along with such obvious deceptions, when they are ostensibly enacting a law to stop deception, is one of the things hard for anyone to explain.

As an industry we have flaunted the demands of the Government and the urgent pleadings of the consuming public about as long as we dare do so, and we had better beware. If the public turns on canned foods as being intrinsically dishonest, because the industry

steadfastly refuses to tell the whole story plainly and without equivocation, the canners will rue the day. That public has been magnificently patient all these years, since the beginning, but if ever it turns in disgust, it can prove just as adamant; and it will not be selective in its distrust of canned foods; it will condemn all without exception. We hold the good will of the consumers as never before in our history, and we ought to do everything in our power to retain, and to build higher that fine feeling. The least the industry can do is to show its consuming public that it is anxious to throw around its products every possible protection, and guard them against deception from every quarter. The public wants this Chapman bill, and it is noting very carefully the absence of support from leading Canners' Associations, and from the industry as a whole.

The great mass of canners want this Name On The Label provision in the new law, but most of them are afraid that if they are found in support of it some buyers may take offense. Not much of a credit to the industry, nor to the character of the men composing it, or at least of the timid souls so acting.

This bill will soon be enacted into law. If you miss this golden opportunity to help yourself (to gain the greatest blessing the industry ever had) and to protect your consuming public, you may not again have such an opportunity. The House has appointed a Committee to redraft a pure food law such as the public, and the Government, have long been demanding. That Committee is as follows:

Representatives Clarence F. Lea, California, chairman; Virgil Chapman, Kentucky; William P. Cole, Jr., Maryland; Samuel B. Pettengill, Indiana; Edward A. Kenney, New Jersey; Herron Pearson, Tennessee; Charles A. Wolverton, New Jersey; B. Carroll Reece, Tennessee, and James Wolfenden, Pennsylvania.

YOU write them at once and demand the inclusion of this Name On The Label clause in the new pure food bill, and give your reasons. Or, clip this and inclose with your letter, as your reason, and it might be well to include also our editorial in the issue of March 15th, page 5. If you succeed in getting this amendment, you and all your posterity, will bless that day it was accomplished. We are sincere when we say that this amendment can be the greatest help to enlarged consumption of canned foods, and therefore, as a business builder of this industry, that has ever happened to the industry.

And may we suggest to this Committee that they call on Mr. W. G. Campbell, Chief, Enforcement Bureau, National Pure Food Law, and ask him to have one of his Inspectors collect samples of canned foods, as sold in the stores of Washington right now. Get the regular run rather than fancy—and of all sorts of goods. Or the Committee might appoint their own inspector to gather such goods, and if so they should select the goods from the ordinary run of grocery or chain stores, rather than from the fancy grocery, because these latter handle fine canned foods, and most of such bear the names of the canners producing them. The testimony of the food inspectors will be enlightening, and the Committee will be astounded at the lessons taught by such samples. If, after seeing them they do not change the present law, then we quit.

And one more suggestion, if they please: watch out for the "joker" always inserted, under such conditions, and which killed Dr. Wiley's desires: the insertion of the word "or sellers" (and sometimes, "or distributors"). The amendment must specify the true name of the canner, packer or maker, and the true place of business (address). With that as a requirement, as many more names as desired may appear, as distributors, or sellers, or retailers, or whatnot.

THE CANNING TRADE

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PROGRAM SPRING MEETING TRI-STATE PACKERS ASSOCIATION

Lord Baltimore Hotel, Baltimore

FRIDAY, APRIL 9, 1937

LUNCHEON MEETING, 12:00 NOON

Greeting—President L. L. Maloney.

Address—Ralph O. Dulany, President, National Canners Association.

Sales Contracts—Wm. A. Free, Secretary, Pennsylvania Canners Association.

Report of Committee on Uniform Terms in Sales Contracts—G. Bartol Silver, Chairman.

A Study of the Alcohol Insoluble Solids in Canned Peas Packed in 1936—Maurice Siegel, Strasburger & Siegel.

General Discussion—What Is Being Done to Popularize Canned Foods?

7:00 P. M.

SUPPER AND ENTERTAINMENT
COURTESY OF THE ALLIED INDUSTRY

SATURDAY, APRIL 10, 1937
10:00 A. M.

Payroll Records and Social Security Legislation—G. R. Parker, Regional Director, Washington, D. C.

Buying Tomatoes on U. S. Grades—George Crisp, Supervisor, Cannery Inspection Work, New Jersey.

The A.A.A. Program in Connection with Canning Crops—F. R. Wilcox, Director, Division of Marketing and Marketing Agreements, A.A.A.

Adjournment.

Luncheon Meeting of the Officers and Board of Directors.

The Present Status of the Sugar Problem with Non-Acid Foods

by E. J. Cameron

Assistant Director, Research Laboratories, National Canners Association, Washington, D. C., at Canning Problems Conference, Convention of National Canners Association, Chicago, Illinois, Wednesday, January 27, 1937.

IT was in 1926 that we discovered that refined sugar was a frequent carrier of "flat sour" bacteria. This discovery was made during the first canning season in which we made use of a field laboratory for bacteriological study. Later that year, we followed with the finding that the insidious thermophilic "sulfide spoilage" organism was also to be found in sugar, and this ingredient was the cause of one of the most costly outbreaks of spoilage which we have on record. Still later we found that the gas forming thermophilic anaerobes were also, on occasion, present, and this completed our bacteriological picture, because these three groups comprise the list of thermophilic bacteria important in the spoilage of non-acid canned foods.

Our early publications evoked various responses. At the outset there was evidence of interest in the sugar industry, especially in the case of those organizations which were affected by adverse reports from our laboratory. Some expressed indignation and treated the matter as a sensational rumor. One, in published comments, later retracted, alleged that we were setting up a smoke screen to obscure the actual conditions leading to thermophilic spoilage. Another organized an investigation which indicated to its satisfaction, at least, that there were no thermophilic bacteria in sugar or its products at any stage in manufacture, and what is more startling, that thermophilic bacteria have never been responsible for spoilage in canned foods.

On the other hand, one sugar refiner almost immediately set up a control laboratory to check thermophilic contamination. Reports from this refiner have been coming to us over a period of seven years or more. Others followed suit and individual studies were made of those operations which were productive of excessive contamination—or to put it another way, those which did not remove contamination coming in with the raw sugar. Appropriate changes were made to remedy defects, and it is an interesting incidental that at least three manufacturers have reported to us that the irksome changes which were necessary resulted economically to their advantage by measurably reducing previously unexplained losses of sugar. Some refiners published accounts of their investigations and indicated the means by which contamination was reduced.

The reaction within the canning industry was interesting also. Some were mildly interested, and others were actively desirous of obtaining sugar of low contamination. There was skepticism in some quarters which gradually disappeared as acceptance of the fact of sugar contamination gained ground.

As the outgrowth of work which established a relation between the bacterial condition of sugar and thermophilic spoilage in non-acid canned products, the first statement of bacterial standards for sugar was announced in 1931. The publication of standards followed a desire on the part of canners to buy sugar that had been tested for suitability for canning. Beyond this, sugar producers had asked for some guide which they might follow in appraising the bacterial quality of sugar. The result is that now the canner and the sugar producer each knows what the other is talking about when he refers to "Canners'" sugar, and such sugar is available usually at no increase in cost to any canner who asks for it. It is safe to say that in all but small part, the sugar used for canning non-acid products is especially prepared and checked for suitability.

As a technical matter the problem is solved as a result of the cooperation by these two branches of the food industry. During the past few years, therefore, our laboratory has concerned itself only to the extent of examining samples sent in by members for the purpose of determining whether deliveries conform to specifications. From the data accumulated by testing samples of this kind, we are able to maintain a continuous check on the quality of sugar which is certified for canning.

Table I presents the results of examination of sugar samples over the six-year period, 1931-36, inclusive.

TABLE I

Results of Examination of Sugar Samples
1931-1936

Year	Total Samples	Within Standard Per Cent	Below Standard Per Cent
1931	314	93.6	6.4
1932	161	94.5	5.5
1933	154	99.3	0.7
1934	204	76.5	23.5
1935	814	82.7	17.3
1936	564	93.1	6.9

In considering the results given in Table I, it should be emphasized that the cross section which is pictured is not representative of sugar in general. Most of these two thousand samples were submitted by member canners as a check of the condition of "Certified" sugar purchased by them. If one were to examine sugar samples at random, the proportion falling below standard would be much greater.

In general, this table illustrates that most of the "Certified" sugar is of suitable bacterial quality. In 1934 and 1935, there is an appreciable drop in the percentage of suitable samples, but in both instances, this drop resulted from a large number of samples representing the product of one or two manufacturers whose products ran beyond the standard limit for contamination. It cannot be said that there was a general falling off in bacterial quality during those two years.

In our Annual Report, it is customary to break down the data and give individual results for cane sugar and beet sugar. This practice is not followed here because there is no generic difference between the two. Both may be contaminated with thermophilic spoilage bacteria of all three groups, and both may be, and are, produced in condition satisfactory for the canning of non-acid products.

Although we regard the sugar problem as solved, we shall continue the examination of routine samples for some years to come. We wish to maintain a continuing record of the condition of canners' sugar, and this record in some instances constitutes a check on control procedures used by sugar manufacturers. For example, two years ago we received several samples of sugar produced by one manufacturer, representing deliveries to two canners. All samples were highly contaminated, even though they were from "certified" sugar. The sugar manufacturer sent a bacteriologist to our laboratory, and the reasons for the discrepancy soon became apparent. The medium for detecting flat sour spores was sterilized at an excessive temperature and for a long period of time, with the result that the medium became so acid that the flat sour organisms could not grow in it. Thus, this routine examination may be of value to the sugar producer as well as to the canner.

As regards the mere existence of thermophilic spores in sugar, we know of only one organization, the one previously mentioned, which disputes that they may be present and, of course, they also dispute that there is any such thing as thermophilic spoilage

in canned foods. Under such circumstances, there is very little hope of any reconciliation of viewpoints. On the other hand, there have been several who, without raising any protest about the presence of the bacteria, have questioned the significance of thermophilic contamination on the ground that it would probably be overshadowed by contamination from other sources.

In 1931, we published our first statement which clearly demonstrated, in a practical way, the effect in canned corn of high contamination by flat sour bacteria. In 1935, we used a sugar which was high in thermophilic anaerobic contamination and demonstrated the effect of its use in corn. In 1936, this sugar was used in peas, and in the same year a corn pack was prepared to show the effect of starch contamination, the results of which will be given here as a matter of incidental interest.

Table II, gives the results of the first experimental corn packs in which contaminated sugar was used.

TABLE II

Spoilage in No. 2 Cans of Corn Due to the Presence of Flat Sour Bacteria in Sugar

Processed at 250 Deg. F.	Per cent spoilage in corn with: No Sugar	Sugar A†	Sugar B‡
70 min.	0	0	95.8
80 min.	0	0	75 ..
90 min.	0	0	54.2

†Sugar A suitable for canning non-acid products—"Flat sour" count 60 spores per 10 grams sugar.

‡Sugar B not suitable for canning non-acid products—"Flat sour" count 2,500 spores per 10 grams sugar.

From the results which are given, it is seen that any bacteria from the suitable sugar were destroyed by the 70 minute process, whereas 95.8% of cans containing the unsuitable sugar were not sterilized. Furthermore, even after 90 minutes at 250° F., which is 20 minutes longer than the process suggested for No. 2 cans of corn, more than 50% of the cans had not been sterilized. Incubation of all lots was at 130° F., and possibly none of this spoilage would have occurred at temperatures below 100° F., but the significant thing is that a canner who used this sugar would be marketing a non-sterile product, subject to spoilage, even though his canning practice and equipment were most modern.

Table III gives results following the use in corn of sugar contaminated with thermophilic anaerobes.

TABLE III

Spoilage in No. 2 Cans of Corn Due to the Presence of Thermophilic Anacrobic Bacteria in Sugar

Processed at 250 Deg. F.	Per cent "swell" spoilage in corn with No Sugar	Sugar "1"	Sugar "2"
50 min.	0	0	100
70 min.	0	0	70.2
80 min.	....	0	46.7
90 min.	....	0	25.0

Sugar "1": Free from all spoilage thermophiles.
Sugar "2": High in spoilage thermophiles—especially thermophilic anacrobes.

The contrast in spoilage results between sugar "1" and sugar "2", points unmistakably to the significance of thermophilic anaerobic contamination of sugar. Even after the 90 minute process at 250° F., which is twenty minutes above the recommended process, there was 25% spoilage in the corn made up with contaminated sugar. Unlike the flat sour spoilage previously referred to, most, if not all of this spoilage would be expected to occur sooner or later at ordinary storage temperatures.

The experimental pack of peas, followed the plan of the corn experiments. Three lots were compared: (a) no sugar, (b) low count sugar, (c) contaminated sugar. The low count sugar carried not more than a trace of thermophilic contamination, and the contaminated sugar, while within standard with respect to flat sour organisms, was below standard as regard thermophilic anaerobes and sulfide spoilage bacteria. The peas were ungraded sweets which were blanched and filled by hand. The brine, which was also added by hand, consisted of 5% sugar and 2½% salt. Processes were at 240° F., for 20, 25, 30, and 35 minutes, the highest process being the one which is recommended by our laboratory. Incubation was at 98° F. for 14 weeks, after which time all remaining flat cans were tested for flat sours and sulfide spoilage. The good cans were then closed aseptically and placed at 130° F. for one week and then tested for obligate thermophiles. The results are given in Table IV.

TABLE IV

Per cent of "Swells" in Experimental Pack Due to Thermophilic Anaerobes in Sugar

Process time at 240° F.	No Sugar used Pct.	Sugar "1" at 98° F. Pct.	Sugar "2" at 130° F. Pct.	Total Pct.
20 min.	0	0	58.3	25.0	83.3
25 min.	0	0	58.3	29.2	87.5
30 min.	0	0	37.5	41.7	79.2
35 min.	0	0	20.8	29.2	50.0

Sugar "1": Low count sugar.
Sugar "2": Contaminated sugar: flat sours—60 per 10 gms.; thermophilic anaerobes 5 +; sulfide spoilage—8 per 10 gms.

The results of this pack are striking in pointing to the certainty of spoilage under normal conditions of storage temperature. In the shortest two processes, greatest spoilage occurred during the incubation at 98° F. In the longer processes, spoilage was substantial at that temperature. Even after the recommended process of 35 minutes at 240° F., there was 50% spoilage. In contrast, however, there was no spoilage at the lowest process of 20 minutes at 240° F. when the peas were canned without sugar or with acceptable sugar.

It is only fair to say that we have used certain lots of contaminated sugar in experimental packs without inducing abnormal spoilage. This, however, is important only in giving further testimony to the fact that material variation in resistance is to be expected in spores of the thermophilic group.

The starch pack was divided into three lots, to one of which no starch was added; the second contained starch which was bacteriologically suitable; the third was put up with contaminated starch which contained significant numbers of all three types of thermophilic organisms—flat sours, thermophilic anaerobes, and sulfied spoilage bacteria. When added, starch was introduced to the extent of 1½ lbs. to 75 lbs. of cut corn. To this were added six gallons of brine made up in the proportion of 10 lbs. salt, 110 lbs. sugar per 80 gallons of water. All lots were processed 45, 60 and 70 minutes at 250° F., following which they were incubated at 98° F. for eight weeks, and at 130° F. for one week.

The following table gives the detailed results of this pack. For purposes of analysis the results of the two incubations, and the combined results are provided:

TABLE V

Spoilage in Corn due to Starch Contamination

Condition	Time at 250°F.	Cans	Swells	Number of F..S †	S. S. †	O. K. †	Per Cent Spoilage
Results at 37° C. (98° F.) after 8 weeks incubation							
No starch	45	24	2	0	0	22	8.3
Low count	45	24	1	0	0	23	4.2
High count	45	24	6	4	3	11	54.1
No starch	60	24	0	0	0	24	0
Low count	60	24	0	0	0	24	0
High count	60	24	0	0	1	23	4.2
No starch	70	24	0	0	0	24	0
Low count	70	24	0	0	0	24	0
High count	70	24	1	0	0	23	4.2
Results at 55° C. (130° F.) after one week incubation							
No starch	45	22	2	0	0	20	9.0
Low count	45	23	2	0	0	21	8.6
High count	45	11	5	5	0	1	90.9
No starch	60	24	0	0	0	24	0
Low count	60	24	0	0	0	24	0
High count	60	23	5	6	0	12	47.8
No starch	70	24	0	0	0	24	0
Low count	70	24	0	0	0	24	0
High count	70	23	0	2	0	21	8.6
Total spoilage results at 37° C. and 55° C.							
No starch	45	24	4	0	0	20	16.6
Low count	45	24	3	0	0	21	12.5
High count	45	24	11	9	3	1	95.8
No starch	60	24	0	0	0	24	0
Low count	60	24	0	0	0	24	0
High count	60	24	5	6	1	12	50.0
No starch	70	24	0	0	0	24	0
Low count	70	24	0	0	0	24	0
High count	70	24	1	2	0	21	12.5

†F. S., Flat sour spoilage; S. S., sulfied spoilage; O. K., no spoilage.

The most striking result of this work was the occurrence of all three types of thermophilic spoilage during the incubation at 98° F. This was the first time such a result has been obtained when the contamination has been introduced with some in-

(Continued on page 34)

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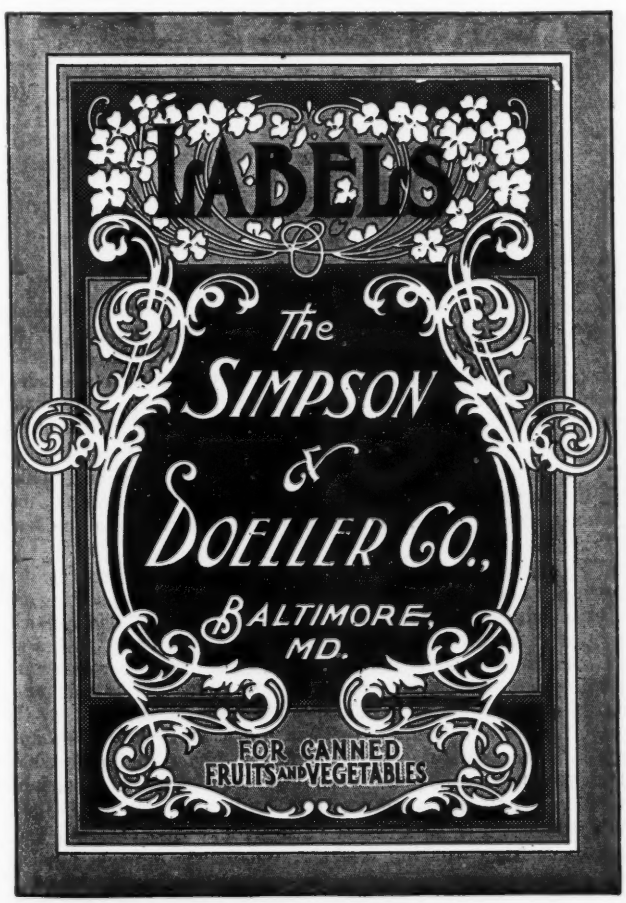

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Control of Cut-out Brix of Pitted Red Cherries in Syrup

by C. A. Greenleaf

Research Laboratories, National Canners Association, Washington, D. C.

THE terms for descriptive labeling of pitted red cherries adopted by the Association's Labeling Committee include the following definitions for density of syrup:

"Extra Heavy Syrup": Where liquid portion of finished product reads not less than 28 degrees Brix.

"Heavy Syrup": Where liquid portion of finished product reads not less than 23 degrees Brix.

"Medium Syrup": Where liquid portion of finished product reads not less than 18 degrees Brix.

Discussion of these terms by the Cherry Section at the 1936 Convention disclosed the fact that proper use of these terms would require closer control of the cut-out Brix than many canners have thought possible in the past. The Research Laboratories were therefore requested to carry on an experimental study of methods of control during the 1936 season.

In planning such work, it seemed evident that the final cut-out Brix must depend upon the concentration of solids in the juice of the raw fruit, the density of the added syrup and the relative weights of fruit and syrup filled into the can. The preparation and examination of experimental packs were therefore directed toward finding out whether a practical system of control could be based on these factors.

Experimental packs were prepared both in New York and Michigan, the Montmorency variety being used in both sections. In preparing each series of packs, sorted and pitted cherries were taken at the point where the cans were being filled. After making a soluble solids test on the juice, No. 2 cans were filled with various put-in weights accurately determined, syrup of known strength was added, the cans were exhausted, sealed and processed according to the regular factory procedure.

Washed and pitted cherries carry various amounts of adhering water, and it was first necessary to determine how much effect this would have on the determination of soluble solids in the juice. If the sample of juice were obtained merely by draining or lightly pressing the fruit, it is obvious that the extract would not represent the fruit as a whole. At the other extreme, if the very highest degree of accuracy were required, it would be necessary to subject the cherries to enormous pressure and squeeze out every bit of juice. However, a few preliminary tests showed that this problem was not particularly difficult. The procedure first tried was passing a No. 2 canful of pitted fruit through a food chopper and squeezing the pulp by hand in a bag formed from a square of folded cheesecloth. The first pressings gave as high a solids test as could be obtained by the hardest pressing, indicating that grinding had liberated the juice fairly completely from the pulp. It was afterwards found that thorough mashing of the unground fruit would give the same result, and was quicker and more convenient. As indicated above, it may be that this procedure does not give an absolutely true value for the solids in the entire liquid portion of the wet fruit, but it proved to be reliable enough for the purpose in view.

The determination of soluble solids in the juice was made by means of a Zeiss hand refractometer, which gives readings agreeing closely with those of a Brix hydrometer on the same samples. If a Brix hydrometer is used for this test, it is necessary of course to press out enough juice to fill the hydrometer jar, but the refractometer requires only a drop of liquid which can easily be taken from the mashed sample. If a Brix hydrometer is used, it should be one of narrow range; the range 10-20° would probably be most satisfactory.

The method of calculating "Calculated Brix" may be described as follows:

In a few days after packing, the soluble solids of canned cherries become evenly diffused throughout the contents and thus the cut-out Brix measures the percentage of soluble solids in the entire liquid contents of the can; the free syrup and that within the tissues of the fruit as well. The source of the soluble solids is twofold; the juice of the cherries and the added syrup. If we could compute the amount of solids contributed by each of these, add them and divide by the total weight of liquid contents, we would get the per cent of soluble solids in the entire liquid contents, or the cut-out Brix. On this basis we could set up, without any experimental work at all, a method of calculating the cut-out Brix. Reduced to a formula, it would be as follows:

$$S = \frac{JW_cS_c + W_sS_s}{JW_c + W_s} \quad \ldots\ldots(1)$$

where

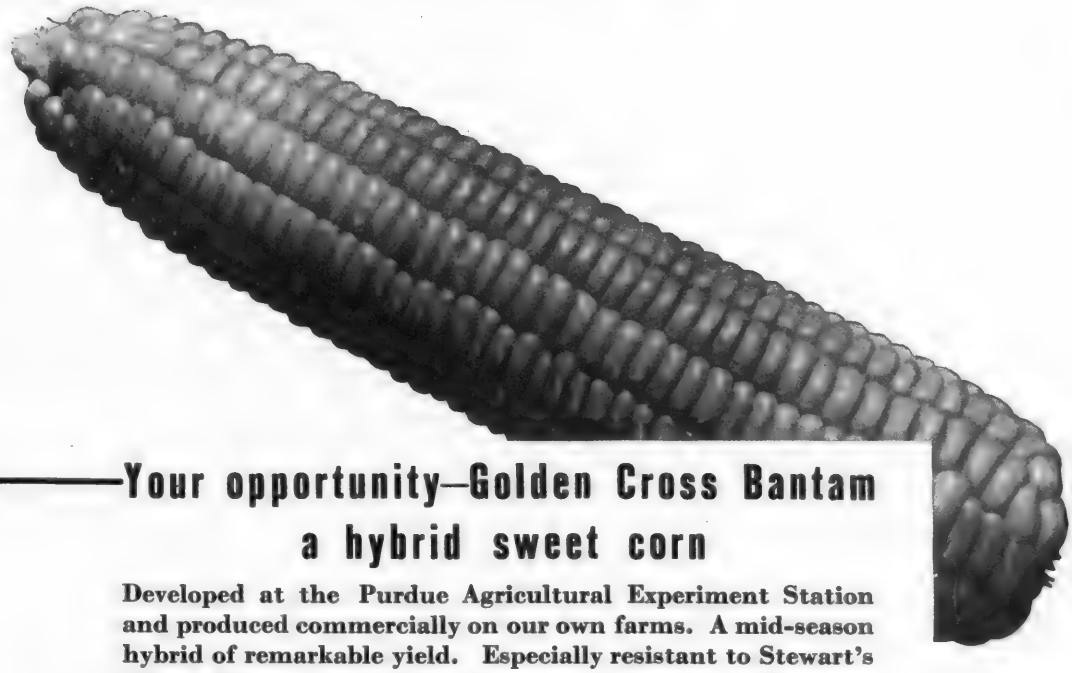
S = Cut-out Brix
J = Proportion of Juice in Cherries
W_c = Put-in Weight of Cherries
S_c = Per Cent Soluble Solids in Juice
W_s = Weight of Added Syrup
S_s = Brix of Added Syrup

This would be a useful formula if we could evaluate all the things that go into it, but there are several difficulties in the way. First, the value of J, the proportion of juice, can be determined only by chemical analysis. Of course we could adopt an arbitrary value for this factor using analyses already made. That would be fairly satisfactory, but there are other difficulties.

Second, the value of S_c, the percentage of soluble solids in the juice. This is obtained by the test already described, which gives a result undoubtedly characteristic of the sample, but may not necessarily include all of the soluble solids in the fruit cells.

Third, the effect of the canning procedure, and this is the most important consideration since it is capable of upsetting the entire calculation. Between the time the can is filled and the time it is sealed, a number of things can happen to it to change the amount and composition of the contents. If a steam exhaust is used, some steam may condense into the can. If too much syrup is added, some of it will slop out or be pushed out by the topping device on the closing machine. During the exhaust there is some diffusion of the contents, and any liquid which is lost will not consist of syrup alone, but will be a variable mixture of syrup juice and perhaps condensed steam.

In spite of these objections, Formula (1) furnishes the best frame work for a working formula, and for the present purpose



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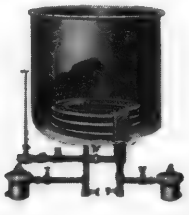

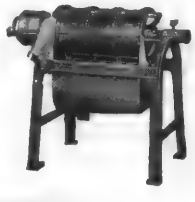

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it was modified by dropping out the factor J and putting in two entirely arbitrary factors A and B, which could be evaluated from the actual experimental results.

$$S = \frac{AW_cS_c + BW_sS_s}{W_c + W_s} \quad \text{.....(2)}$$

	A	B
(1)	1.0045	1.0531
(2)	1.0080	1.0444
(3)	1.1162	1.0433
(4)	1.01	1.04

The first values given for A and B were obtained from the New York packs, using as the weight of syrup the weight actually put in. The second set also represents the New York packs, but using as the weight of syrup the difference between the net contents of the closed can and the put-in weight of cherries. The third set of values comes from the Michigan packs by the same method of calculation as the second.

Formula 2 can be used very simply by means of a Pearson's square or proportioning diagram in the following form:

$$\left.\begin{matrix} 1.01S_c \\ W_c \end{matrix}\right\} S \left\{\begin{matrix} 1.04S_s \\ W_s \end{matrix}\right.$$

Subtracting along the diagonals, S from $1.04S_s$ and $1.01S_c$ from S, gives the two lower terms, the **relative** weights of cherries and syrup (W_c and W_s) required to give the desired cut-out Brix (S), when the raw fruit gives the soluble solids test S_c and the Brix of the syrup used is S_s. For example: $S_c = 16.5°$; $S_s = 40°$ and $S = 23°$. Then $1.01S_c = 16.66$ and $1.04S_s = 41.6$.

$$\left.\begin{matrix} 16.66 \\ 18.6 \end{matrix}\right\} 23 \left\{\begin{matrix} 41.6 \\ 6.34 \end{matrix}\right.$$

41.6 — 23 = 18.6 (relative weight of cherries)
23 — 16.66 = 6.34 (relative weight of syrup)

If the actual put-in weight of cherries in a No. 2 can is 15 ounces, then by proportion the necessary weight of syrup will be 6.34 multiplied by 15/18.6 or 5.11 ounces.

This diagram contains five quantities, and if any four of them are furnished the other one can be found by the method just outlined. Considering the number of different values which each factor may assume, the number of possible combinations is enormous. For control purposes, however, the situation is greatly simplified by three facts:

1. The put-in weight of cherries is usually fixed by the desired drained weight.
2. The weight of syrup is limited to that required for proper fill of the can.
3. Only three values have been specified for minimum cut-out Brix, namely 18°, 23°, and 28° Brix.

These limitations make it possible to construct tables showing what effect the percentage of soluble solids of the raw fruit has on the put-in weight which must not be exceeded or the Brix of syrup which must be attained if the final cut-out Brix is not to fall below a certain minimum. Tables II and III were so calculated, assuming minimum total fill for a No. 2 can as follows:

Cut-Out Brix	Total Fill, Ounces
18°	20.25
23°	20.75
28°	21.25

This corresponds to about 93% fill. Well filled cans will usually contain more than these weights, but if the excess is due merely to added syrup, the effect will be to increase the cut-out Brix and give a wider margin of safety.

The relationships shown in Tables II and III are also shown in Figure II in the form of a nomographic chart which some will find quicker and more convenient to use. It is used by placing a straightedge across two of the scales, connecting the two known values, such as per cent soluble solids in juice and desired put-in weight, and reading on the third scale the value sought, such as required syrup strength.

Assuming that an effort is made to control the packing procedure according to the test of the juice and the figures in Table I or II, it may be of interest to consider the effect of variations, unavoidable or otherwise. Formula 2 lends itself to the calculation of such variations and some of them are presented in Table III.

On the basis of the foregoing, the following suggestions are offered for controlling the cut-out Brix of pitted red cherries in syrup:

1. Determine the percentage of solids in the juice of the raw fruit. Remember that the object is to find out exactly what goes into the can, and draw a representative sample of the pitted fruit, preferably by mixing several canfuls taken at intervals. Mix the sample and place at least a No. 2 canful in a dry No. 10 can. Mash thoroughly with a closed No. 2 can or similar object. Determine the Brix reading of the expressed juice by means of a Brix hydrometer (range 10°-20°) or a hand refractometer (range 0-30°).

2. Consult Table I or II or Figure II for the maximum put-in weight of cherries which must not be exceeded, or the minimum strength of syrup which can be used.

3. Regulate the addition of syrup so that full cans will be obtained, but with a minimum of loss due to spilling or topping.

4. Check the cut-out Brix frequently the day after packing to make sure your packing procedure permits the direct use of Table I and II or Figure II. If the results obtained are out of line with expectations, change the put-in weight or strength of syrup by an amount indicated by the variations shown in Table III.

The tables are calculated only for No. 2 cans, since that size was used in the experimental packs. The same relationships would probably hold for No. 10 cans, making due allowance for size, but the effect of the packing procedure on the amount of condensation of steam in the exhaust or syrup loss due to spilling might be slightly different, and it seems best not to offer figures for No. 10 cans without experimental verification.

The range of solids in the cherries encountered in 1936 was high, due to the dry season. In preparing the tables, it was necessary to extend the solids range somewhat below that of any of the cherries used this year. Whether this resulted in any error can only be decided when fruit grown in a moister season is available, but it is doubtful if any material error could come from this cause, since the experimental results agreed throughout with those to be expected from theory.

TABLE I

MINIMUM BRIX OF SYRUP FOR DIFFERENT PUT-IN WEIGHTS OF PITTED CHERRIES (No. 2 CANS).

Soluble Solids In Juice %	Put-In Weight of Pitted Cherries, ounces. 13	13.5	14	14.5	15	15.5	16	16.5	17
Minimum Cut-Out 18°									
13	26	27	28	29	31	33	35	38	42
14	24	25	26	27	28	29	31	34	37
15	22	23	24	24	25	26	28	29	32
16	21	21	21	22	22	23	24	25	27
17	19	19	19	19	20	20	20	21	22
18	17	17	17	17	17	17	17	17	16
19	15	15	15	15	14	14	13	12	11
20	15	14	13	12	11	10	9	8	6
Minimum Cut-Out 23°									
13	38	40	42	44	47	51	54	60	65
14	36	38	40	42	44	48	51	57	61
15	35	36	38	40	42	45	48	52	56
16	33	35	36	38	40	42	44	48	52
17	32	33	34	35	37	39	41	44	48
18	30	31	32	33	34	36	38	40	43
19	28	29	30	31	32	33	35	37	39
20	27	27	28	28	29	30	31	33	34
Minimum Cut-Out 28°									
13	49	52	55	58	61	66	71	77	84
14	48	50	53	56	59	63	68	73	80
15	47	49	51	53	57	60	65	70	76
16	45	47	49	51	54	58	62	67	73
17	43	45	47	49	52	55	59	63	69
18	42	43	45	47	50	52	56	60	65
19	40	42	43	45	47	50	53	57	61
20	39	40	41	43	45	47	50	53	57

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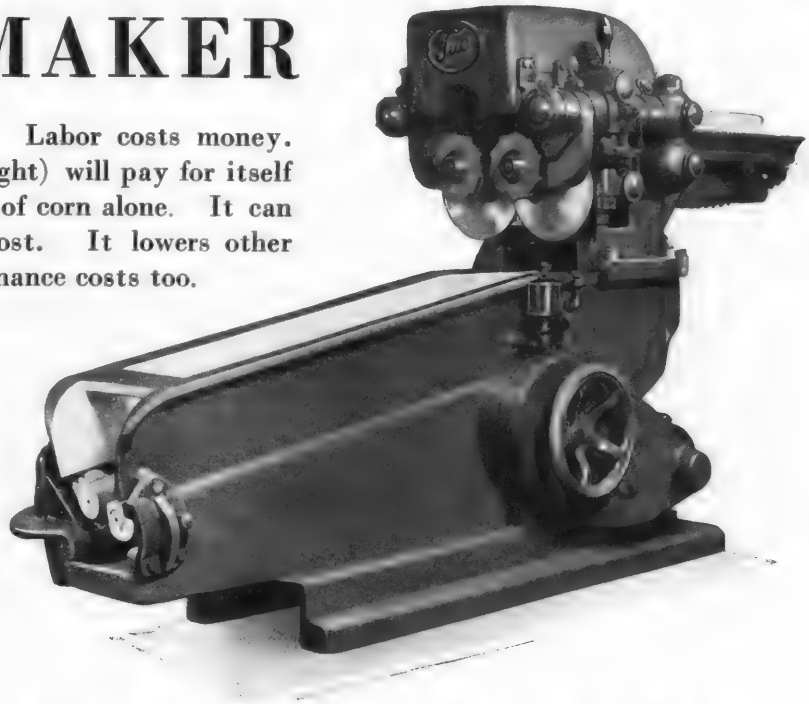

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TABLE II

MAXIMUM PUT-IN WEIGHT (OUNCES) OF PITTED CHERRIES FOR SYRUPS OF DIFFERENT DENSITIES (No. 2 CANS).

Soluble Solids In Juice %	20	25	30	35	40	45	50	55	60
	Minimum Cut-Out 18° Strength of Syrup, Degree Brix								
13	....	12.6	14.8	16.0	16.8	17.3	17.7	18.0	18.2
14	....	13.7	15.7	16.7	17.4	17.8	18.2	18.4	....
15	....	14.9	16.6	17.5	18.0	18.4	....	....	....
16	12.2	16.5	17.7	18.4	....	....	....	....	....
17	15.6	18.3	....	....	....	....	....	....	....
18	....	....	....	....	....	....	....	....	....
	Minimum Cut-Out 23°								
13	....	....	....	12.0	13.5	14.7	15.5	16.1	16.6
14	....	....	....	12.5	14.0	15.1	15.9	16.4	16.9
15	....	....	....	13.1	14.6	15.6	16.3	16.8	17.3
16	....	....	11.3	13.7	15.1	16.1	16.8	17.3	17.7
17	....	....	12.1	14.5	15.8	16.7	17.3	17.7	18.1
18	....	....	13.1	15.3	16.4	17.3	17.8	18.2	18.5
19	....	....	14.2	16.2	17.2	17.9	18.3	18.6	18.9
20	....	....	15.4	17.2	18.0	18.5	18.9	....	....
	Minimum Cut-Out 28°								
13	....	....	....	....	....	11.9	13.1	14.1	14.8
14	....	....	....	....	....	12.2	13.5	14.4	15.1
15	....	....	....	....	....	12.6	13.8	14.7	15.4
16	....	....	....	....	11.4	13.0	14.2	15.1	15.8
17	....	....	....	....	11.8	13.5	14.6	15.5	16.1
18	....	....	....	....	12.3	14.0	15.1	15.9	16.5
19	....	....	....	....	12.9	14.5	15.5	16.3	16.9
20	....	....	....	11.0	13.5	15.0	16.0	16.8	17.3

TABLE III

EFFECT OF VARIATIONS IN WEIGHT AND SOLUBLE SOLIDS OF FRUIT AND SYRUP

1. Increase in Cut-Out Brix per ounce additional syrup (Weight of cherries constant)

Cut-Out Brix	Strength of Syrup, °Brix 20	30	40	50	60
18°	0.1	0.6	1.0	1.5	2.0
23°	....	0.3	0.8	1.2	1.7
28°	....	....	0.5	1.0	1.4

2. Increase in Cut-Out per degree increase in Brix of syrup (Total fill constant)

Total Fill Ounces	Put-In Weight of Cherries, Ounces 14	15	16	17
20	0.31	0.26	0.21	0.16
21	0.35	0.30	0.25	0.20
22	0.38	0.33	0.28	0.24

3. Decrease in Cut-Out Brix per ounce increase in put-in weight of cherries

(a) Weight of syrup constant

Strength of Syrup, °Brix	Decrease °Brix/Ounce
20	0 - 0.1
30	0.1 - 0.2
40	0.2 - 0.3
50	0.3 - 0.4
60	0.4 - 0.5

(The effect is greater when the per cent solids in the juice is lower)

(b) Total fill constant

Soluble Solids In Juice, %	Strength of Syrup, °Brix 20	30	40	50	60
13	0.4	0.9	1.4	1.9	2.4
14	0.3	0.8	1.3	1.8	2.3
15	0.3	0.8	1.3	1.8	2.3
16	0.2	0.7	1.2	1.7	2.2
17	0.2	0.7	1.2	1.7	2.2
18	0.1	0.6	1.1	1.6	2.1
19	0.1	0.6	1.1	1.6	2.1
20	0.0	0.5	1.0	1.5	2.0

4. Increase in Cut-Out Brix per 1% increase in soluble solids of cherries

Total Fill Ounces	Put-in Weight of Cherries, Ounces 14	15	16	17
20	0.7	0.8	0.8	0.9
21	0.7	0.7	0.8	0.8
22	0.6	0.7	0.7	0.8

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We are without direction as to where the book may be obtained, other than the indefinite mention in the heading, but the address of Dr. A. W. Bitting is 1030 Green Street, San Francisco, Calif. Nor can we say what the price is, but whatever it is, the book will be found well worth it.

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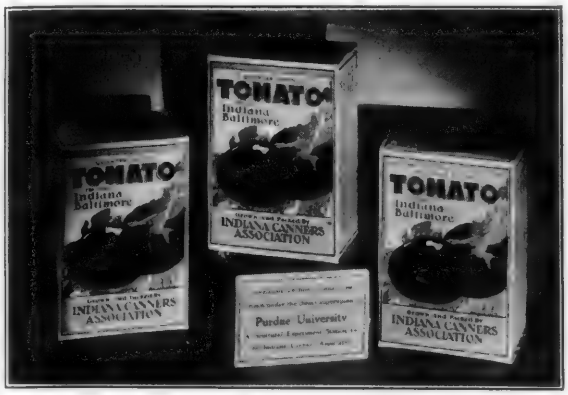

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RESULTS OF FERTILIZER PLACEMENT EXPERIMENTS IN OTHER STATES

By H. R. Smalley

National Fertilizer Association, Washington, D. C.

EXPERIMENTS involving various methods of applying fertilizers to the vegetable crops have been conducted at many locations in the eastern part of the United States during the past few years. I shall omit reference to the very comprehensive experiments that have been conducted at the Geneva station, since these will be covered fully by Professor Sayre.

Dr. H. H. Zimmerley of the Virginia Truck Experiment Station reported recently results obtained in an experiment with peas on a farm in the Norfolk section. He states that when fertilizer was applied in bands at the side of the row the yield was 1,939 pounds of peas, as compared to a yield of 1,433 pounds of peas to the acre where the fertilizer was applied in the mark and mixed with the soil before planting.

In an experiment with lima beans, Dr. Zimmerley reports that average yields obtained over a four-year period show that yields can be increased very substantially by employing the side-placement method. Particularly is this true in the case of the first picking. When the fertilizer was placed in a band 3 inches below the seed, the yield at the first picking was 2,160 pounds, and the total yield was 4,248 pounds to the acre. But when the fertilizer was applied 2 inches to each side and 1 inch below the seed level the yield at the first picking was 3,145 pounds and the total yield was 4,565 pounds to the acre. In this case, the increase for the first picking amounted to almost 1,000 pounds of unshelled beans to the acre, and might well mean the difference between a profit and a loss on the crop.

In an experiment conducted by the U. S. Department of Agriculture in Florida with snap beans, the first picking yield was also substantially increased by placing the fertilizer at the side of the row. The yield without fertilizer at planting was 3,147 pounds to the acre, and the yield for the side-placement method was 3,935 pounds to the acre.

Some very striking results have been obtained with potatoes, the experiments having been conducted in Maine, New York, New Jersey, Ohio, Virginia and Michigan. In these experiments, the average yield when the fertilizer was placed under the seed was 243 bushels to the acre; when it was mixed in the row with the soil the yield was 246 bushels to the acre; but when it was applied in bands on each side and at about the seed level the yield was 271 bushels to the acre, an increase for the band placement method of 25 bushels to the acre.

CONVENTION DATES

MARCH 30, 1937—Pennsylvania Canners Association, Spring Meeting, Richard McAllister Hotel, Hanover, Pa.

APRIL 9-10, 1937—Tri-State Packers. Spring Meeting, Lord Baltimore Hotel, Baltimore.

APRIL 21-22, 1937—Indiana Canners. Spring Meeting, Claypool Hotel, Indianapolis.

FRUIT AND VEGETABLE JUICES REQUIRE MARK OF ORIGIN IN FRANCE

WE are just in receipt of a press release from the Bureau of Foreign and Domestic Commerce, Department of Commerce, San Francisco, dated March 13, 1937:

"Effective May 11, 1937, the marking of origin requirements on preserved fruits will be extended to include also canned fruit and vegetable juices imported into France. This means that from the above date labels on canned fruit and vegetable juices must bear the complete name of the country of origin either in English or in French, without abbreviation, in letters at least six mm. high, providing this label is securely glued on the can on its entire surface. If not entirely glued, there must be in addition to the mark of origin on the label a supplementary sticker on either the top or the bottom of the can carrying the name of the country of origin, unabbreviated, in letters not less than six mm. high. The marking in both cases may be either 'United States of America' or 'Etats Unis d'Amerique.'

"This in no way alters the basic 'corrective' mark of origin requirements of France, which necessitates the addition of the words 'Importe des' or 'Frabrique aux' immediately preceding the full name of the country of origin, where the trade name is similar to some place, figure, or personage in France, or where the name of a French firm is given on the label of the can or where any other indication is used which might give the impression that the produce is of French origin.

"This latter requirement and also the full details on the basic French marking of origin laws is summarized in a special circular of January 15, 1937, by this Bureau which many firms have already received. Additional copies are still available on request."

TRADE AGREEMENT BETWEEN THE UNITED STATES AND EL SALVADOR FEBRUARY 20, 1937

A TRADE agreement between the United States and El Salvador was signed February 20, 1937, which will come into force thirty days after its proclamation by the Presidents of both countries, following ratification by the Government of El Salvador.

The concessions to the United States, so far as canned foods items are concerned, are as follows:

A reduction of 83 per cent was obtained in the duties on *canned mackerel* and *canned salmon.* These items together represented less than $1,000 of trade in 1929 and about $1,500 in 1935.

The duty on *canned peaches, pears* and *salad fruits* was reduced by 74 per cent; United States exports of these products were valued at $2,600 in 1929 and $1,600 in 1935.

A reduction of 80 per cent was obtained in the duty on canned asparagus, peas, corn and tomatoes and tomato juice, representing a trade of about $5,000 in 1929 and $3,000 in 1935.

High Speed

CANNING MACHINERY

made of the best metals

SYRUPERS for Fruits

FILLERS for Soups, Juices, Puree, Ketchup, Oil and Beer

UNIT ROLLER EXHAUST BOXES, any capacity . . . all sizes of cans.

SAFE - T - CLUTCHES
NEVER - MISS TIMERS

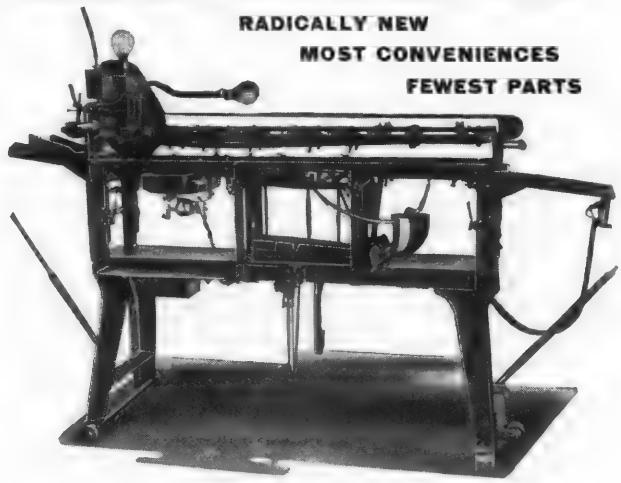
E. J. JUDGE

Canning Machinery
ALAMEDA, CALIFORNIA

KYLER LABELING MACHINE

Quickly adjusted for wide range of can sizes

RADICALLY NEW
MOST CONVENIENCES
FEWEST PARTS



"It has everything with half the parts"

WESTMINSTER MACHINE WORKS

Labeling and Boxing Machine Manufacturers

Westminster, Maryland, U.S.A.

DOMESTIC DISTRIBUTORS—A. K. Robins & Company, Inc., Baltimore, Md.; Chisholm-Ryder Company, Inc., Niagara Falls, N. Y.; Berlin Chapman Company, Berlin, Wis.; Willard Machinery Company, Los Angeles, Calif.; Duncan Equipment & Supply Co., Seattle, Wash.
CANADIAN DISTRIBUTOR—The Brown Boggs Foundry & Machine Co., Ltd., Hamilton, Canada.
FOREIGN DISTRIBUTOR—Ateliers de Construction E. Lecluyse, S. A., Antwerp, Belgium, manufacturers for Continental Europe.

LABELS

MODERN DESIGNS

to meet your trade requirements.

PIEDMONT LABEL COMPANY
INCORPORATED
DESIGNERS · · LITHOGRAPHERS
BEDFORD VIRGINIA

If you had graded your peas on a

Hydro-Geared Grader

your bank account would be larger and your customers better satisfied. Write us and let us prove it.

THE SINCLAIR-SCOTT CO.

"The Original Grader House"

BALTIMORE :-: MARYLAND

With Canned Foods Distributors

By "OBSERVER"

Special Correspondent of The Canning Trade

CUTTING SHIPPING LOSSES

A COOPERATIVE campaign between canners and wholesale grocers and the railroads for educational activities intended to reduce losses arising from dented cans and damaged labels in shipment will be launched during April or May by the Association of American Railroads.

Outlining the proposed campaign and conditions leading up to it, Joseph B. Alexander, chairman of the containers committee of the National-American Wholesale Grocers' Association, which initiated the move for a study of this problem, says: "Wholesale grocers will recall that last Fall the containers committee, in its efforts to minimize the problems of dented cans and damaged labels, filed with the railroads of the country suggested revised specifications for fibre boxes that would provide 'adequate containers' for transportation. It will also be recalled that Consolidated Freight Classification Committee, representing the railroads of the entire country, docketed the subject for public hearings in New York, Atlanta, and Chicago, and that the Intercoastal Steamship Lines supported NAWGA's specifications. The railroads still have the matter of revised specifications under advisement.

"In a further effort to minimize losses from dented cans, canners and wholesale grocers requested the Association of American Railroads to sponsor in cooperation with the National Canners' Association and National-American Wholesale Grocers' Association an educational drive to improve handling methods of food products in transportation. The railroads have agreed to cooperate and it is understood will soon be prepared to offer handlers of food products placards carrying suggestions to be posted prominently in canneries and warehouses, setting forth 'Sure Methods to Reduce Losses from Dented Cans.' Detailed methods of packing and handling will be widely publicized so that foods may be moved from canner to and through the retailer without unnecessary and uneconomic losses. This educational campaign will probably be staged sometime during April or May."

THE FARMER SPEAKS

THE placidity of the situation surrounding the Robinson-Patman Law, undisturbed within recent weeks by "blasts" from either its proponents or opponents, was rudely shattered this week with an attack on the measure from a new source, the American Farm Bureau Federation.

The Federation finds the law "obnoxious" from the standpoint of farm cooperatives, which no longer find themselves able to get the discounts and allowances which they formerly obtained as tribute to their massed buying power.

Some move to more definitely exempt cooperatives from the provisions of the law may be looked for, but such a move will be bitterly opposed by food trade protagonists for the measure on the ground that any exemptions of this nature would likewise encompass the cooperative buying groups in the food field, who were "co-targets" of this legislation at its inception.

HEARINGS CONTINUE

IN the meantime, the Federal Trade Commission continues its enforcement activities.

Further testimony relative to buying "edges" granted to the Great Atlantic & Pacific Tea Company by canners was introduced at hearings in Rochester this week, and another series of Commission hearings, in New York City, took up that agency's complaint against the Biddle Purchasing Company, which is also charged with violating the brokerage provision of the Robinson-Patman Law.

While conceivably these proceedings will lead to cease and desist orders in both cases, the A. & P. has already indicated its determination to press for a judicial showdown on the constitutionality of the anti-discriminations law and these proceedings, interesting as they are, promise to be but the overture to a later court contest.

PRIVATE BRANDS GROWING

PRIVATE label distribution in the wholesale grocery field is steadily growing, said John R. Bromell, wholesale grocery specialist, in discussing trade trends before the sectional meeting of the National-American Wholesale Grocers' Association at Edgewater Park, Miss., this week.

The tremendous increase in the use of private brands among wholesalers in recent years, according to Mr. Bromell, has been due largely to the fact that the margin of profit on nationally advertised brands is generally believed to be too small to cover the wholesaler's operating cost. Therefore, the wholesaler prefers to put all selling effort on his private brands which usually carry a substantial gross margin. An established private brand, Mr. Bromell believes, also promotes customer loyalty by making him entirely dependent on the wholesaler for many profitable items which he cannot secure elsewhere.

All-Steel Lifetime Construction

CRCO VINER FEEDER

Designed To Prevent Clogging

Strong, rugged construction that endures season after season, the new CRCO All-Steel Viner Feeder is especially designed to permit feeding only the proper amount of vines. This feature eliminates the necessity for all mechanical means of vine distribution and prevents overloading.

Canners are rapidly recognizing this improvement and changing over to CRCO Viner Feeders of enduring steel . . . both for their economy and convenience.

Get Feeder Bulletin No. 1 Today

CHISHOLM-RYDER CO., INC., NIAGARA FALLS, N. Y.

Chisholm-Ryder Co., Inc. Seattle, Wash.
Chisholm-Ryder Co., Inc. Columbus, Wis.
Acme Foundry & Machine Co. Springfield, Mo.
Jas. Q. Leavitt & Co. Ogden, Utah
Chisholm-Ryder Co., Inc. Indianapolis, Ind.
A. K. Robins & Co., Inc. Baltimore, Md.
Chisholm-Ryder Co., Inc. Niagara Falls, Ont.

A STRONGER, BETTER CASE —Over a *Million* Already Sold!

WEBER LINER-JOINT

(Pat. and Trade Mark Applied For)

THE SEAMLESS CORRUGATED CONTAINER

ANOTHER PAKSAFE PRODUCT

DAVID WEBER & CO.

3500 RICHMOND ST., PHILADELPHIA

Est. 1883

Write for Sample #2 Case and Circular

Wholesalers, especially voluntary groups and retailer-owned, Mr. Bromell added, are buying more direct from packers and manufacturers and are eliminating intermediary contacts.

Recent addition of fresh fruits and vegetables to the lines handled by many wholesale grocers, Mr. Bromell finds, have added a new and profitable department for the jobber.

In forecasting the future trends in grocery wholesaling, Mr. Bromell believes that the cash-and-carry is going to increase in importance; the voluntary groups are going to increase further in both number and importance; and wholesalers are going to continue to expand their sales energy on long-margin, private label goods at the expense of low-margin, high demand goods.

Only in cash-and-carry operation, he believes, is the handling of the low-margin high demand line showing the wholesale grocer a fair return on his investment and his operations.

COMPULSORY FOOD INSURANCE

OF interest to canners and other processors is a measure currently before the Missouri Legislature proposing compulsory insurance of food manufacturers and wholesalers.

The measure proposes that no person or corporation (wholesaler, jobber or manufacturer) now engaged in, or hereafter engaging in, the manufacture, distribution or sale of food products shall be permitted to engage in such business unless proof of ability to respond in damages be given. The evidence of such proof would be a certificate of any insurance company authorized to do business in Missouri issued for the benefit of any person incurrng losses by reason of any negligent act, duty or commission, of any employee or agent of the manufacturer, wholesaler or producer of any food products, to the amount or limit of $10,000, exclusive of interest and costs, on account of injury to, or the death of, any person or persons resulting from the use or consumption of food products.

The license, charter or right of any person to engage in the food business in the State would remain suspended, and would not at any time thereafter be renewed, until such person had established proof of his ability to respond in damages for any liability thereafter incurred for personal injuries to, or the death of, any person.

The Food and Drug Commissioner would be required to furnish any person who had been injured by reason of consumption of food with all information of record concerning the ability of the manufacturer, wholesaler or jobber to respond in damages.

In effect, the measure would compel manufacturers and wholesalers of food products to carry liability insurance for the purpose of protecting consumers who make claim for personal injuries because of consumption of food products, which injuries might be due to negligence of manufacturers or their distributors.

'GRAMS of INTEREST

SECRETARY FRANK SHOOK announces that it has become necessary to change the dates of the regular Spring Meeting of the Tri-State Packers' Association to April 9th and 10th. The meeting will begin with a luncheon on April 9th at 12 o'clock, with a supper and entertainment on the evening of the 9th extended through the courtesy of the allied industry, the arrangements being made by the Get-Together Committee. The session on the 10th will close at noon, which will be followed by a meeting of the Board of Directors.

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PACIFIC PACKING COMPANY has been incorporated at Oakdale, Calif., to carry on a fruit and vegetable canning business. The incorporators are L. C., S. K. and Samuel Kaufman, and the capital stock is placed at $200,000.

•

MORGAN PACKING COMPANY has completed construction of a new three-line corn packing plant at Scottsburg, Ind.

•

WILLIAM T. HOWETH, of Lewes, Del., has been appointed sales representative for the Hansen Canning Machinery Corporation, manufacturers of "Master-Built" Machinery in the Tri-States—Delaware, Maryland and New Jersey—as well as Eastern Pennsylvania and Virginia.

•

CROWN CAN COMPANY'S second big project is to get under way shortly with the erection of a $3,500,000 can manufacturing plant at St. Louis, Mo., an eight-acre tract having been acquired from Missouri Portland Cement Company for the purpose.

•

SCHUCKL & CO., San Francisco, will shortly engage in canning spinach for the first time at their plant at Sunnyvale, Calif.

•

A BILL is now before the Texas Legislature providing for State Board of Health inspection of canneries.

•

THE OUTLAWING of salmon traps has caused the dismantling of the Pacific-American Fisheries cannery at South Bellingham, Wash., the world's largest salmon cannery.

•

MORE THAN 22,500 TONS of sardines were landed at San Pedro, Calif., during the week of March 8th, one of the largest catches ever made there. The season ends this month, and the output will be smaller than that of the previous season.

•

STOKELEY BROTHERS & CO., Indianapolis, have leased the Wabash Canning Corporation plant and equipment for the packing of peas.

DAN GERBER, vice-president and assistant manager of the Fremont Canning Company, Fremont, Mich., has been elected commander of the local American Legion Post. One of his "buddies," according to the "Fremont Gerber News," claims that Dan Gerber was one of the post's first heads, that he saw two years of service and was awarded the Croix de Guerre medal for bravery in action and was one of the few to be sent back to the United States as a special instructor.

•

CALIFORNIA PACKING CORPORATION, San Francisco, has placed into effect a new insurance plan which will affect all regular employees. This provides for insurance, annuities, retirement benefits, and the like, all in addition to the insurance that has been in effect for years. Experts pronounce it one of the most liberal and comprehensive adopted by any large corporation.

•

CHILTON CANNING COMPANY, Chilton, Wis., will also pack lima beans this season.

•

"FOOD FACTS" compiled by the Division of Consumer Information, New Jersey State Department of Agriculture, claim: Government grading of meats is on the increase. The grade terms used are "choice," "prime," "good," "medium" and "plain." Garabanzos, or chick peas, are to be introduced and promoted in the United States by Mexican interests. Germany is now importing sauer kraut from Japan. Blonde prunes—ranging from golden yellow to silver—are now appearing on Eastern markets. Cream is the vitamin carrier in Vitamin D milk.

•

ORANGE JUICE PACK FOR 1936

AT the request of the Giannini Foundation of the University of California, Canners League of California agreed to compile 1936 pack figures on orange juice. Reports were received from all orange juice packers of record and the following are the total number of cases reported for the different sized cans:

6/10	61,364
12/46 oz.	6,824
48/1 tall	197,942
48/211	213,896
48/picnic	15,044
72/8 oz. 3"	7,099
72/8 oz. 3¼"	1,312
Miscellaneous—	
12/3	9,342
12/5	13,064
48/10 oz.	188
6/1 gal.	9,462
24/12 oz.	40,699
24/13½ oz.	27,010

Converted to a 48 No. 1 tall basis this figure reads 507,367 cases, as compared to 408,616 cases for 1935 on the same basis.

..for YOUR CORN LINE!

Equip with Universal Corn Cutters—and you'll find you've made a winning move, a short cut to profits!

The UNIVERSAL Corn Cutter

The Universal is the only machine that successfully cuts corn for both whole grain and cream style packing.

When you use this amazingly efficient cutter you'll find that besides "stepping up" quality, you'll actually get a yield that is from 5% to 15% greater! Time after time, it has more than paid for itself in a single season.

Make this important move now: mail the coupon below for complete details of the Universal.

Modern Canning Equipment For All Food Products

FOOD MACHINERY CORPORATION

Sprague-Sells Division
HOOPESTON, ILLINOIS

FOOD MACHINERY CORPORATION A-201-T
(Sprague-Sells Division) HOOPESTON, ILL.

Please send me
☐ Full details of the Universal Corn Cutter.
☐ Your complete General Catalog No. 400.

Name _____
Address _____
City _____ State _____

DRESS UP YOUR PACKAGE

By "BETTER PROFITS"

Special Correspondent of The Canning Trade

EDITORIAL in March 8 issue pointed out the new trend in merchandising canned foods. Canners were admonished to take an interest in the affairs of the retailer, and those heeding the warning will benefit no end. Back of the retail distributor, however, is the consumer, Mrs. American Housewife, whose word is still law. What about her? Surely the majority of canners are doing all they can toward maintaining high quality, and it's about time! The members of the fraternity wishing to adopt the informative style of labeling will argue that flavor is an outstanding attribute of quality, and no one can deny this. Flavorful canned foods honestly packed and priced will win favor wherever sold, but I wonder if we can't go even further back toward the fields in search of particulars, the improvement of which would help increase our sales and profits.

One of the better known sales management consultants said, several years ago, he never approached a problem in sales engineering with anything but an open mind. The average executive, when approached by one interested in improving his sales, will tell you that his business is different, that certain plans working successfully in other lines cannot be adapted to the merchandising of canned foods. The writer is of the opinion, after years of experience in the field of foods, that sound, common sense works wonders when applied to the marketing of canned foods, just as it does in other lines. The fact that not more fortunes are being made by canners does not lie at the door of the industry, but instead it comes right back to the failure of those in the business to apply sound principles to the conduct of it.

The management expert referred to once asked of the packers of a well known condensed milk why they packed it in round cans. "Why don't you put condensed milk in square or flat cans?" he asked, and no one gave him a ready, authoritative answer. We are apparently ready to pack our output in cans of varying sizes, as the whim seizes us, but, oh, so reluctant to pioneer when it comes to new packages!

In other fields manufacturers spend immense sums of money when a new package is being designed. Old lines of labels are discarded without hesitancy whenever cosmetic manufacturers feel their sales will be increased by the change. Composition stoppers, lids and covers are quickly put on packages in the drug trade as soon as a competitor steps out with a container in a new dress. Why won't canners be equally alert? Today cellophane has a tremendous vogue. Packers of high class, quality canned foods can get a profitable price for them if all angles of the sale help the ultimate distributor to move goods. Canned foods are not cheap, in the generally accepted sense of the word, especially when quality packs are under consideration. Why not go a step further in packaging canned foods and give them an appearance that will serve as a credit to the plant in which they were canned? Cellophane outer wrapped fancy fruits would have an appetite appeal to the housewife looking for the best. Canned vegetables for infant feeding, if outer wrapped, would appeal more than ever to the anxious mother willing and able to pay for the best for her baby. Doll up your pack in cellophane and help educate the housewives of America to use only the best.

As long as I can remember anything about canned foods the majority of them, by far, have been packed twelve and twenty-four in a shipping container. Canned foods are sold by the dozen time and time again. Dealers would welcome any logical plan whereby a purchaser might be easily led to buy in quantities. Coca Cola has a household package of six bottles easily carried and economically priced. Has any canner noticed this package and adapted the idea to the merchandising of his output? If there are many doing it, I will be surprised! I'd like to hear about one—even one!

Canners, having adopted the plan of printing recipes on the label of their products, quickly learned the field was limited, that not enough recipes could be printed on the face of the label to interest the buyer greatly. A few back-print their labels with recipes and seem well satisfied that they are teaching more and more users each day to serve their products economically and in interesting ways.

If I were canning foods susceptible to increased use if more folks knew how to serve them best I'd have a lot of small recipe leaflets printed. I'd fold them snugly, cut a slit in each label, and tuck the leaflet in the label. There would be some waste, or duplication, rather, but the purchaser would have a recipe handy the next time she wanted to serve my product. This idea need not be carried out in connection with the entire season's output, and not necessarily in the case of every label in the twelve or twenty-four in the case, but a lot of them could be gotten out each fall and winter.

Some canners do about the same thing by having a recipe folder die cut, stapled and fitted inside the rim or flange on the top of each can. More manufacturers outside the canning trade do this, however, than there are canners following the plan. If you feel your product is fool-proof in use, that no new uses may be found for it and housewives never read such messages as might be sent out as suggested, you won't do anything about getting started this season on the road of

WHY PACK ENTIRELY BY HAND?

When a Substantial Reduction in operating Cost is possible with a

"MASTER BUILT" SEMI-AUTOMATIC FILLER

CAN BE FURNISHED WITH ADJUSTABLE FILLING HOPPER—THEN GRAVITY DOES 95% OF THE JOB.

FURNISHED WITH FLAT TOP OR RECESSED BOWL, BOTH EASILY REMOVED AND CHANGED FOR VARIOUS SIZES OF CANS

COMPLETE STOCK OF ALL SIZES CARRIED

Our Hand Pack Filler as shown is used for a large variety of Fruits and Vegetables, String Beans, Tomatoes, Beets, Berries, Kraut, etc.

California Representative:
KING SALES & ENGINEERING CO.
200-210 First Street
San Francisco, California

Intermountain Representative:
JAMES Q. LEAVITT COMPANY
905 First Security Bank Bldg., Ogden, Utah
1955 1st Avenue South, Seattle, Washington

HANSEN CANNING MACHINERY CORP., CEDARBURG, WISCONSIN, U.S.A.

Golden Cross Corn

Hybrid Corn - White Varieties

its Quality Tonnage that Counts

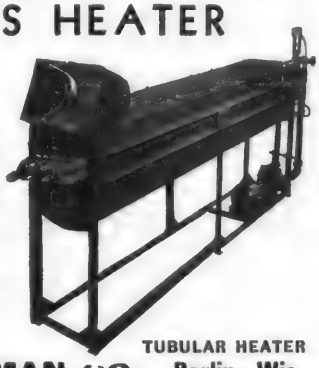
PEAS, BEANS, CORN, TOMATO
Other seeds for the Canner

LEONARD SEED COMPANY
CHICAGO

CONTINUOUS HEATER

for Tomato Juice, Kraut Juice, Crushed Tomatoes, etc.

ALL Stainless Steel or Nickel. Tubular Heaters are AUTOMATICALLY controlled, the food cannot burn on these heaters. Ends are removable for cleaning. CONTINUOUS and AUTOMATIC for any capacity desired.



TUBULAR HEATER

BERLIN CHAPMAN CO., Berlin, Wis.

5/8 Machine Made Hamper

Quality

TOMATO FIELD HAMPERS

Five Types At Reasonable Prices

RIVERSIDE MANUFACTURING CO., INC.
Murfreesboro, North Carolina

"Largest manufacturers of 5/8 bushel canners' field hampers in the world"

5/8 Hand Made Hamper

telling the consumer a lot more about your products.

You may be fortunate enough to be packing a specialty that might be packaged in a special manner. The other day I saw canned pork and beans offered for sale in miniature baked-bean pots that would make the best, the cutest small baking dishes in the world. Not every canner of pork and beans can afford such packaging, but the truth is not many thought of such an idea. One usually has a dickens of a time getting stuffed olives, or any others, for that matter, out of the neck of a small bottle. Why not pack them in small baking dishes or some like container having a definite resale value in everyday life. I'll bet the first packer or canner doing this specialty packing in a large way will have no cause to complain *re* business or profits.

Perhaps all these suggestions are too far ahead of the times for adoption at present, but they are worth thinking about, at any rate. If you aren't ready to act on them, look over your labels and see if you are doing all you can right now toward increasing the sale of the products they adorn. I'll bet a new hat that you can quickly think of some inexpensive way in which you can, in 1937, tell your customers more about your products and how to use them. Up in Chicago is one of the well known distributors of canned foods under private label. In a retail store stocking their goods my wife had to listen for ten minutes, more or less, to the praise given to Green Gage plum pie made from plums put out by this packer. She bought a can, carried it home, and learned from the label absolutely nothing about the plums in the can, or how to use them, let alone how to best incorporate them in a pie!

Oh, I'll take that back. The label did tell the plums were peeled, that the net weight of the can was 1 pound 14 ounces, and the name of the distributor. That's all!

The largest selling desserts in the country are trademarked gelatin desserts. On the boxes in fine print are explicit directions for use and incorporation into wonderful additions to any menu. Long before Jack Benny popularized Jello it was a leading seller among desserts, but largely because the purchaser could quickly learn how to use the product. Canners of fruits are in competition with gelatin desserts. Why not go all the way and do all that can be reasonably done toward getting some of the business on desserts now going to those who tell their customers how to use their product?

Your sales and profits will increase as you do!

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BROKERS' STANDING COMMITTEES FOR 1937

PRESIDENT McKNIGHT of the National Food Brokers Association announces the appointment of the following standing committees of the Association for 1937, the first named member of each committee being its chairman:

ARBITRATION—Roland W. Harris, Boston; Luman R. Wing, Chicago; Eugene M. O'Neill, San Francisco.

BEANS AND RICE CONFERENCE—Arthur M. Williams, Detroit; D. L. Griffith, Memphis; Stuart C. Fox, Dayton; B. T. Clifford, St. Louis; Clarence C. Parsons, Wichita; Durand Hart, San Francisco.

CANNERS AND DISTRIBUTORS CONFERENCE—Walter A. Frost, Chicago; H. A. N. Daily, Philadelphia; Hunter C. Sledd, Richmond; E. W. Carlberg, Kansas City; James A. Fenwick, Portland, Ore.

CONTRACT WITH PRINCIPALS—Warren R. Corliss, Boston; F. T. Seggerman, New York; L. A. Parker, Evansville; R. B. Leck, Los Angeles; Ward Goodloe, St. Louis; Raymond E. Jacobus, Detroit.

DRIED FRUITS CONFERENCE—R. R. Benedict, Sioux Falls; Ralph D. Davies, Cincinnati; Fred H. Baxter, Seattle; E. B. Holbert, St. Paul; Marion R. Ellis, New York.

CONVENTION LOCATION—Thos. H. McKnight, ex-officio; Howard L. Scott, Omaha; John P. Houck, New York.

ETHICS—Harry L. Wagner, St. Louis; Louis A. Captain, New York; Wm. J. Lindenberger, San Francisco.

FINANCE—P. J. Murphy, Chicago; M. T. O'Brien, Nashville; W. D. Kennedy, Dallas.

GROCERY MANUFACTURERS CONFERENCE—W. Henry Rohr, Philadelphia; H. Wayne Clark, Baltimore; Frank Stiles, Detroit.

LEGISLATION—Harry L. Wagner, St. Louis; Harry C. Faulkner, New York; Wilbur R. Orr, Danville; Samuel T. Millar, San Francisco; George R. Bennett, Buffalo.

LOCAL CLUBS AND ORGANIZATIONS—H. S. Fulcher, Memphis; H. L. Gollong, Los Angeles; Arch S. Martin, Atlanta; H. L. Hills, Des Moines; Jas. H. McInerney, Boston; Ward Goodloe, St. Louis; J. D. Law, Oklahoma City; Randall S. Pratt, Seattle.

MEMBERSHIP—James J. Reilley, first vice-president as chairman, and all State representatives.

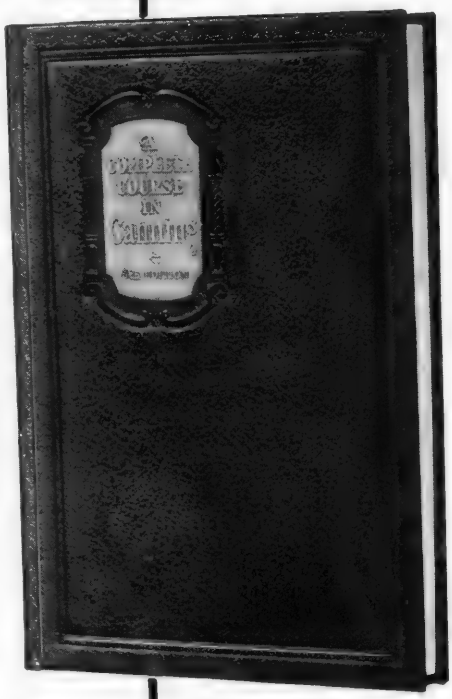
MEMORIAL FOUNDATION—Joseph H. Kline, Cleveland; Walter A. Frost, Chicago; Charles S. Jones, Peoria; H. A. N. Daily, Philadelphia; Luman R. Wing, Chicago.

RESOLUTIONS—Paul W. Paver, Chicago; Harry E. Gill, Buffalo; Eugene M. O'Neill, San Francisco; Ira E. Merrill, Toledo.

SERVICE FOR BROKERS—Clarence M. Huber, Cleveland; H. Hill White, Columbia; John H. Trainor, Baltimore; Francis N. Coon, Sioux Falls; Walter S. Dixon, Boston; H. S. Fulcher, Memphis; Frank K. Brown, San Francisco; P. K. Taylor, Dallas; Fred A. Havey, New York; Paul W. Paver, Chicago.

SUGAR SALES CONFERENCE—Ody H. Lamborn, New York; M. W. Lewis, Jr., Louisville; A. B. Clark, Denver; Frank K. Brown, San Francisco; L. A. Parker, Evansville.

The 1937 executive committee, as provided for in Article IV, Section 7, of the constitution of the Association will be composed of Warren R. Corliss, Boston; Howard L. Scott, Omaha; Clarence M. Huber, Cleveland.



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THE CANNING TRADE

The Canned Foods Authority

BALTIMORE, 20 S. GAY STREET MARYLAND

WANTED and FOR SALE

This is a page that must be read each week to be appreciated. You are unlikely to be interested every week in what is offered here, but it is possible you will be a dozen times in the year. If you fail to see and accept, your opportunity and money are lost. Rates upon application.

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WANTED—Good used round two-crate steam retort, complete and in first-class condition, also process crates. L. H. Shields, English, Indiana.

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WANTED—Canners attention: Send us a list of any canning equipment that you may have to sell for spot cash or to exchange for new machinery. Write for our catalog covering a complete line of up-to-date canning machinery. A. K. Robins & Co., Inc., Lombard and Concord St., Baltimore, Md.

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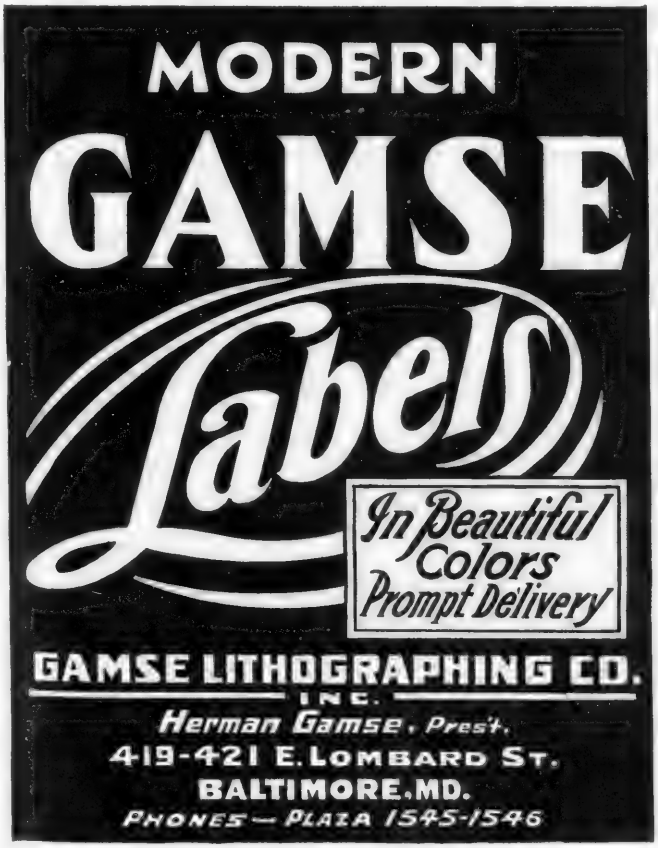

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WANTED—Factory Superintendent for Maryland Crushed Corn Factory. Give references. Address Box A-2196, c/o The Canning Trade.

WANTED—Food chemist experienced in factory production especially on tomato products and pickle specialties. Please give full details, including salary requirement. Good opportunity. Address Box B-2205, c/o The Canning Trade.

WANTED—Assistant superintendent for large canning plant. One who understands preserves, jellies, apple butter, etc., preferred. Permanent position and good salary for a capable man. Address Box B-2207, c/o The Canning Trade.

SITUATIONS WANTED

POSITION WANTED—As Production Manager. 20 years successful experience in the canning of high grade fish, preserves, cranberry sauce, etc. Especially experienced in the development of new products. Would also consider sales for New England territory. References. Address Box B-2192 c/o The Canning Trade.

POSITION WANTED—By Canning Factory Superintendent with company packing one or more of the following canned foods: whole tomatoes, tomato products, green beans, pumpkin, kraut, hominy, pork and beans. Can lay out plant and install equipment for products mentioned. References. Address Box B-2191 c/o The Canning Trade.

WANTED—Position as superintendent or plant manager. Twenty years' experience packing quality peas, corn, beans, spinach. Understand the business from field to finished product. Best of references. Address Box No. 2195, c/o The Canning Trade.

POSITION WANTED—By salesman with 20 years experience merchandising food products and kindred lines, and familiar with trade in Baltimore, Washington, Philadelphia and New York State. Desires connection with a reputable food manufacturer, packer, importer or distributor. If interested can furnish ample references. Address Box B-2190 c/o The Canning Trade.

POSITION WANTED—By Salesman and Representative with 13 years' experience merchandising canned foods, cold pack, and allied lines, familiar with trade, Maryland, District of Columbia, Pennsylvania, Virginia, North and South Carolina and West Virginia. Desires connection in the capacity of brokers and sales representative with food manufacturer, packer, importer or refiner. Can furnish reference of high order. Address Box B-2201, c/o The Canning Trade, Baltimore, Md.

POSITION WANTED—As Superintendent of Production. Know the canning business from the field to finished product and pack a high grade of fruits and vegetables. References. Vernon Reed, 2910 Swiss Ave., Dallas, Texas.

POSITION WANTED—By a Pickle Man with lifelong experience in the pickle and table condiment line. Can turn out strictly high grade or standard merchandise. Have been connected with some of the best houses in this country as superintendent and packer. Suitable references. Address Box B-2206, c/o The Canning Trade.

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THE MARKETS

IN LEADING CANNED FOODS CENTERS

WEEKLY REVIEW

Spot Market Very Quiet During This Holiday Week—The Spot Holdings of Canned Tomatoes—Futures Also Quiet—Care Needed in Future Contracts

HOLIDAY WEEK—In the main this has been a holiday week, in this section, as Thursday, the 25th, was Maryland Day, followed by Good Friday, both bank holidays, and many firms spread it over Saturday, making a holiday until Monday, 29th. The buying of canned foods has followed this plan, all hands reporting that buying has been very quiet. There is an amount of unrest, due to the strike and labor troubles, not showing on the surface, and it is having its effect. Students and observers of the phenomena warn us that we Americans are too complacent, too given to feeling that "everything will be all right," too occupied with our own personal affairs to learn from the experiences of other countries, and too subservient to our politicians who are allowed to handle the matter in their own way. That we are too "cocky" in the knowledge that once aroused the American can be counted on to handle the situation in a business-like manner, and too lazy to employ prevention rather than cure. If half the things pointed out by these observers come true we may be facing the most eventful summer in our history, and not a happy one.

Meantime spot canned foods prices remain strong; consumption is keeping on its heavy pace, and all agree that decks will be clear of practically all canned foods long before new goods can arrive. With buying quiet, confidence complete among buyers and present holders of spots, little needs be added to make a very comfortable market picture.

And along that line an interesting announcement was made this week: the spot holdings of canned tomatoes on March 1st in the Atlantic Coast region. It shows in this section which is supposed to hold the great bulk of spot canned tomatoes outside of California:

No. 1s, all grades	47,800 cases
No. 2's, all grades	1,431,000 cases
No. 2½'s, all grades	170,000 cases
No. 3's, all grades	41,464 cases
No. 10's, all grades	126,000 cases
Or a total of	1,816,264 cases

And the same report says that in the entire country, exclusive of California, there were 3,125,000 cases all sizes combined on March 1st. It is this latter figure that will be most considered, unless we expect the fly in the ointment "exclusive of California," and which the buyers will size on to hold back the price advances which should be inevitable. However, California will have no bearing on the canned tomato market of the rest of the country, because they need all they have to supply the Coast trade, and if there is any overage there, it will get into the balance of the market only after the last case here has been sold, and prices have bounded upwards, the freights keeping them out.

Take the figure 3,125,000 total cases and try to stretch it over the months of March, April, May, June and July—which must be supplied before new pack can come upon the market in any quantity—and you get 625,000 cases per month for the country. Last year they consumed nearly 25 million cases of canned tomatoes, or an average of over two million cases per month; but as a fact these same five months consumed the majority of that big pack. That is, consumption is always heavier in these months than in any other months of the year. Consumption this year is heavier than it was in 1936, actually and not theoretically, because people have more money to spend, more are employed and retailers know the goods are going out in a more steady stream. We have on hand, then, only 25 per cent of the cases needed to keep this market going. If the entire tomato pack of California for 1936 were added to this holding, there would still be but one-half the amount of canned tomatoes that will be needed.

We are not trying to "bull" the canned tomato market; there would be no use attempting such a thing, apparently, because it seems to make no difference what figures or facts are laid before a tomato canner, he just likes to sell at cost or less, as he calls it. They are the world's greatest humanitarians: they love to feed the hungry without profit. But if higher prices for canned tomatoes are not justified by this spot stock showing then there is no such thing as a law of Supply and Demand.

FUTURES—Futures are as quiet as spots, it would seem, and this being so, the time might be profitably employed in considering the contracts under which you have or may sell. On March 22nd, Frank M. Shook,

Secretary of the Tri-State Packers Association, sent out the following, on this subject, and you will do well to carefully consider the points he makes. He says:

FUTURE CONTRACTS

Gentlemen:

"An examination of different types of future contracts, used by the Tri-State Canners and brokers, indicates the importance of giving the matter of future contracts careful study so that canners may not unwittingly become involved under the Robinson-Patman Law.

At the last meeting of our Board of Directors a Committee was appointed to confer with the Field Brokers of our territory on this matter. Our Committees, with representatives of the Brokers, will meet one day this week at which time it is hoped constructive work may be launched toward making a final report and recommendations at the Spring meeting which is scheduled for April 9th and 10th at the Lord Baltimore Hotel, Baltimore.

The main point of difference in contracts is the provision relating to delivery in case of short crops. These range all the way from guaranteed full delivery, to the regular pro-rata delivery plan, as agreed upon by the Conference Committee representing the National Canners Association and the National Wholesale Grocers' Association. Between these two extremes are many sorts of delivery provisions. There is no question but what a canner, who sells under two different types of delivery clauses, would be subject to the Robinson-Patman Act in case of short crops.

It is noted that another weakness in many sales contracts is the provision that where buyers' labels are used the buyer will relieve the seller from any responsibility for misbranding. This the buyer cannot do, as the courts hold both parties responsible.

It will be recalled that the Committee on contracts of the National Canners Association recommended this clause in their report at the January meeting in Chicago. However, the Labeling Committee of the National Canners Association closes its report with the following paragraph:

'Finally, it should be remembered that the individual or firm which actually makes the shipment in interstate commerce is responsible for the legality of the product under the Federal Food and Drugs Act, even though the goods bear the labels of another firm. A canner who ships under buyer's labels, therefore, is responsible for the legality of those labels whether or not the product was packed by him, and even though the labels do not bear his name. No understanding with the distributor or others can relieve him of this responsibility.'"

NEW YORK MARKET

By "New York Stater"

Special Correspondent of "The Canning Trade"

Continued Improvement Shown—Trend To Higher Price For '37 Packs—Offers To Take Entire Output Rumored—Tomatoes Firm—Buying Future Corn—Pea Undertone Improved—Salmon Strongly Held—Fear For Shortage Of California Spinach Pack—Milk Firm, With Heavy Export Sales.

New York, March 26, 1937.

THE SITUATION—Conditions in the spot canned foods market continued to show improvement during the past week, and prices have apparently turned definitely upward. Salmon has strengthened at the recently advanced levels named by some of the larger packers, vegetables are firming, and fruits are doing better. Distributors are now exhibiting an inclination to keep their inventories complete and are buying in better volume on spot. No. 10s generally are strong, reflecting continued heavy buying incidental to the enlistment of 100,000 additional members by the C. C. C.

THE OUTLOOK—Present trends point to higher prices on 1937 packs, and buyers who took the bull by the horns a few months back and contracted for futures are now in position to sit back and congratulate themselves. While futures are still being freely quoted in many sections of the country, an evident uptrend in sellers' price views is already in evidence, and a general upward revision in many lines is apparently in the cards.

OUTPUT CONTRACTS—The trade here is considerably interested in reports that jobbers in some parts of the country have placed output contracts with smaller canners, receiving the benefit of the brokerage commission on such purchases. Under such contracts, the seller is allowed to grant the buyer brokerage or any other price concession his business judgment may dictate. Jobbers so contracting (and it is believed that the number is small) are of course taking a speculative position in the market, which appears fairly safe under present conditions, but may likewise hedge by reselling some of their purchases at, say, 2 per cent over their net price, which would give them that much of a margin, representing brokerage concessions.

TOMATOES—Southern spot tomatoes have moved in better volume this week, and this is particularly true of No. 10s, which have firmed under the influence of recent Government buying. For prompt shipment, canners quote southern spots at 45 cents for 1s, 70 cents for 2s, $1.10 for 3s, and $3.25 for 10s, f. o. b. plants. California tomatoes are not moving in a large way for shipment east, and the market holds at 87½ cents for 2½s and $2.75 for 10s, on puree grade, and $1.10 and $3.25, respectively, for fancy solid pack, f. o. b. common shipping point, Pacific Coast.

CORN—An exceptionally good volume of future corn buying is reported from some parts of the country, and this undoubtedly indicates a substantial amount of speculative accumulation on the part of some interests in the trade. There were no changes reported during the week in the spot corn situation, with inquiry showing a slight pick-up on both standard and extra standard grades. New York State packers are offering new pack fancy cream style on the basis of $1.00, in some instances, although many canners in the Empire State are still inclined to "lay off" futures of all descriptions owing to the uncertainty regarding probable pack costs this year.

PEAS—Buyers are out of the futures market, in most instances, for a breathing spell, and canners are taking stock of the situation. Considerable forward business has already been placed on the basis of last year's prices, and, if the current year's developments conform to some opinions now forming in the market, these prices will look extremely low before the year is out. There were no developments of general importance reported in the spot pea market during the week, although continued improvement in the market undertone is evident, and many canners are showing a disposition to carry their small unsold stocks into

the new season rather than liquidate them at some of the low prices recently bid by distributors.

SALMON—The general market has firmed up to the basis established a short time ago by the larger canners, and current offerings are reported on the basis of $1.00 for chums, $1.10 for pinks, $1.70 for medium reds, $1.75 for cohoes, and $2.25 for reds. Columbia River chinooks are strongly held in first hands, with 1s offered at $3.60 and halves at $2.35. Continued export inquiry and a fair domestic jobbing demand threatens to force the market on the Coast to still higher levels, but distributors are endeavoring to cover their requirements in the resale market rather than bid up prices in the primary market.

SPINACH—Some rather bearish reports on probable pack totals in California are currently reaching the market here, with the top estimate of 1,600,000 cases indicating a drop of 500,000 cases from last year. Unless conditions on the Coast change materially for the better, eastern packers will find themselves in a better competitive position on this product this year, as was the case with asparagus a year ago. Currently, California canners quote fancy spinach at $1.20 to $1.30 for fancy 2½, with 10s ranging $3.90 to $4.05, while the southern market is posted at $1.10 for 2½s and $3.75 for 10s. Taking into consideration these differentials and the lower freights on eastern packs, canners in this area now have a substantial price edge over their West Coast competitors.

CANNED MILK—With heavy buying of dry milk for export credited to the action of several European countries in building up food reserves in anticipation of possible war scares, or actual hostilities, export interest in canned milk is reported on the increase. The market for this product is showing a firm tone at $3.00 for evaporated for the non-advertised brands and $3.15 for the advertised product. Sweetened condensed whole milk, known brands, is firmly held at $4.85 per case of forty-eight 14-ounce cans.

CANNED FRUITS—Pricewise, there have been no important developments in the California canned fruit situation during the past week. Distributor buying interest has eased off, following the placing of substantial business on the termination of the maritime strike, and buyers are now marking time pending further developments in the Coast situation and the further liquidation of their current inventories.

HOLIDAYS—The market is taking on a quiet tone at the week-end. A number of houses closed down today, in observance of Good Friday, and tomorrow's Jewish holiday will witness a general cessation of operations in many parts of the trade.

CHICAGO MARKET

By "Illinois"

Special Correspondent of "The Canning Trade"

Weather Cool, Market Continues Firm—Sellers' Market Prevails on Corn, Tomatoes and Peas—Fruit Prices Advancing—The Old Timer.

Chicago, Ill., March 26, 1937.

GENERAL CONDITIONS—Canned food market is running along an even course. Conditions are unchanged. The principal items continue firm. Future trading seems to be developing; at least a wider interest is reported from various sources.

THE WEATHER—Spring arrived officially on the 20th, but, since then, one in Chicago would not know it was springtime. The weather has been mild, but somewhat sharp.

CORN—The spot market is unchanged, with No. 2 standard firmly held at 95 cents to $1.00 Mid-West factory points.

On futures, interest has been centered in the prices that have recently been named by the leading Illinois canners. These quotations average:

No. 2 tin Fancy Co. Gent..... @ $ .97½/1.00
No. 2 tin Fancy Golden Bantam @ 1.00
No. 2 tin Fancy Wh. Ker. Ban. @ 1.12½

The trade are anxious to purchase future No. 2 Standard Evergreen at 75 cents factory, but few indeed are the canners willing to confirm at that level.

TOMATOES—The market on spots has a firmer tone to it. No. 2 standards are held at 75 cents Indiana factory, and sales at less have not come to your correspondent's attention during the week under review. There is some talk going the rounds about Utah trying to sell No. 2½ standards in Chicago, but definite particulars are lacking.

Future tomatoes have been without interest. The impression is that the little fellows that sold at 70

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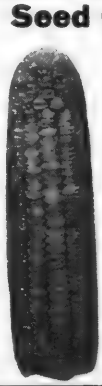

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cents and 90 cents have been run to cover and that to place a contract today the buyer would have to pay 75 cents for No. 2 standards and $1.00 for No. 2½ standards, Indiana and Ohio factories.

PEAS—Wisconsin canners do not seem so anxious to press their spots on the market. The lowest prices one hears are 90 cents factory to 95 cents delivered. The feeling is growing that, rather than to sacrifice spots, the canner can well afford to carry over in view of the high packing costs that confront him.

Future peas have not been talked much this week, and little or no business has been recorded. It is still too early to obtain any reports upon planting operations of the pea canners either in Wisconsin, Illinois or Indiana.

SPINACH—The market in California is apparently not holding to the opening basis that was announced some ten days ago, as offerings from the Coast have reached Chicago at:

No. 2½ Fancy Cal. Spinach..... @ $1.17½

but the real important features of the spinach situation are the low prices that have prevailed out of the Ozarks. One hears of 60 cents f. o. b. Arkansas for No. 2 tin spinach, but just what the quality is, is problematical.

CALIFORNIA PEACHES—Renewed interest has been noted in Chicago. Reports from California are that the market has been quite active. It is known that stocks of all grades and sizes are low. No. 2½ choice sliced peaches are wanted, but it is difficult to purchase these unless buyer takes equal quantities of choice halves, both at $1.55 Coast.

APRICOTS—Last year's packing practically cleaned up, and it looks as if this year's prices will be considerably higher than the opening of 1936.

PEARS—Late advices from both the Pacific Northwest and California seem to bear out the statement made in this column last week re the propaganda that has been going around. Pears are really in a firm position rather than overstocked.

GRAPEFRUIT—The going quotations in Florida today are:

No. 2 Fancy Hearts ..... @ $1.05
No. 2 Fancy Grapefruit Juice..... @ .80

f. o. b. Florida shipping points. Compare this with the low prices that ruled just a month or more ago, and one asks the question: What happened? Low prices stimulated consumer demand. It is said that there is still plenty of fruit on the trees, but that the growers are refusing to pick it in the hope and expectation that they will realize even higher prices a little later.

APPLES—The expected late winter and spring demand for No. 10 tin apples has not developed. Everyone was under the impression that, with the high prices ruling on No. 10 tin berries, peaches, pears and other fruits, apples would come in for a bigger and wider "play." Possibly it will come this next sixty days. Prices remain the same both in the State of Washington as well as in New York and Pennsylvania.

SAUERKRAUT—Is in a strong position, and the trade at large appreciate it. No. 2½ fancy kraut cannot be obtained today at less than 95 cents factory, with some holding at $1.00.

THE OLD TIMER (continued from last week)—Smoking contentedly at his pipe, the Old Boy said: "Guess you have written enough about that address of Paul Myer's, but before we switch to another subject, particularly at this time when the Trade Press is full of the reports on the hearings before the Federal Trade Commission in the A&P case, etc., it might be well to note that the Senate Committee on Judiciary in its report said in part relative to this brokerage matter:

" 'In section (b) the phrases "or any allowance or discount in lieu thereof" and "either to the other party to such transactions" are added by your committee's recommendation. As so revised, this section forbids the payment or allowance of brokerage, either to the other principal party, or to an intermediary acting in fact for or under the control of the other principal party, to the purchase and sale transaction.' "

(To be continued.)

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GULF STATES MARKET

By "Bayou"

Special Correspondent of "The Canning Trade"

Shrimp Continues Scarce—Oyster Pack Progressing Nicely With Fine Quality Stock — Cold Weather Retards Bean Planting.

Mobile, Ala., March 26, 1937.

SHRIMP—The production of shrimp was very light last week and not only the canners did not get any, but the raw, headless shrimp dealers were without shrimp a good part of the time.

The stock of frozen shrimp has been pretty well cleaned up and very few fresh or frozen shrimp were available. On the other hand, the stock of canned shrimp on hand is very low and somebody is going shrimp hungry if they have not already done so.

Lent ended on Holy Saturday, March 27, and while the consumption of seafoods will be reduced about a fourth in Catholic communities, yet the Catholics observe every Friday in the year as days of abstinence, which are days on which no flesh meat, such as beef, veal, pork, lamb, mutton and fowl are eaten. In place of these they eat, seafoods, eggs, cereals, vegetables and fruits.

The price of canned shrimp is $1.55 per dozen for No. 1 medium and $1.65 for No. 1 large, f. o. b. factory.

OYSTERS—The demand for raw oysters has held up well during Lent, due partly to the weather being cold, but it is expected to drop after Lent and it will stop altogether when the weather turns warm.

A good many of the boats that are now engaged in tonging oysters for the raw market will have to dredge or tong for canneries.

The canners are now getting a break, because the weather is favorable and the oysters are yielding well, so the canners are pushing the pack for all that it is worth.

Biloxi, Miss., leads every year by a big margin on the amount of oysters canned and this year is no exception.

Alabama has had a light pack, due to the scarcity of oysters on the reefs and the factories are getting ready to close down.

Biloxi factories get most of their oysters from the Louisiana reefs, in what is called the Louisiana Marsh.

The price of canned oysters is $1.10 per dozen for five ounce and $2.20 for ten ounce, f. o. b. facotry.

SNAP BEANS—The weather stays cold and no planting of beans is going on, but the calendar says that Spring is here. This means warm weather and the planting of snap beans for the canneries will be pushed for all that it is worth in order to get the pack started as near as possible to the first of May.

The price of cut stringless beans is 85c per dozen for No. 2, f. o. b. cannery.

FAST AND ABSTINENCE—My attention has been called to the fact that I should use the popular term "fast days" to denote fish days and I am only too glad to do this, because fast and abstinence mean practically the same thing and the phrase "fast days" is certainly more familiar to the layman. However, my reasons for calling the fish days abstinence days is because the Catholic Church does make a distinction between fast and abstinence. In other words, abstinence days are days on which the use of flesh meat is prohibited, and the fast days are those on which you can eat meat or seafoods, but the proportion of the meals are cut down. Now, as the seafood industry from a commercial standpoint is only interested in the days of abstinence of the Catholic Church, I used the word abstinence instead of fast.

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CALIFORNIA MARKET

By "Berkeley"

Special Correspondent of "The Canning Trade"

Heavy Rains Delay Spinach Packing, Damage Fruits—Opening Spinach Prices Named—Del Monte Spot Fruit List Revised—Future Stringless Beans Quoted.

Berkeley, Calif., March 26, 1937.

HEAVY RAINS—California has been visited by very heavy rains during the week, postponing the opening of the spinach packing season and marring the prospects for a bumper crop of apricots. Definite damage is also reported to the plum crop in foothill counties of the Sierra. Rivers are rising fast and some damage has been done in the lowlands. Except in a few localities, the rainfall is now above normal for the season.

SPINACH PRICES—An interesting feature of the week has been the bringing out on the part of packers generally of formal opening prices on 1937 pack California spinach. The predictions made some weeks ago that opening prices would likely be on a basis of $1.30 or $1.35 for No. 2½s have been borne out, with a little added for good measure. Certainly those who booked business at $1.15, before crop conditions or operating costs were known, have something to ponder over. Opening prices on featured brands are quite uniform, and are as follows: Buffet, 60 cents; picnic, 72½ cents; No. 1 tall, 92½ cents; No. 2 tall, $1.12½; No. 2½, $1.40, and No. 10, $4.35. These packers direct the attention of the trade to the fact that there is considerable saving to them if spinach is shipped during the packing season, so a special allowance has been made for shipment on or before May 15, 1937. This allowance is: Buffet, 1½ cents per dozen; picnic and No. 1 tall, 2½ cents; No. 2 tall, 3½ cents; No. 2½, 5 cents, and No. 10, 15 cents per dozen. Some packers are guaranteeing the list against their own decline on unshipped orders, goods in transit and unsold floor stocks in buyer's warehouse for sixty days, while others extend the time limit to the end of the year. A second group of packers have brought out opening lists on the following basis: Buffet, 57½ cents; picnic, 70 cents; No. 1 tall, 90 cents; No. 2 tall, $1.07½; No. 2½, $1.35, and No. 10, $4.20. These packers make the same special allowance for shipment by May 15. While business to date has not been especially heavy, some packers enjoying a reputation for the excellence of their spinach are getting some substantial orders.

FRUIT PRICES—The California Packing Corporation has come out with a new spot list on Del Monte brand fruits, supplanting the one issued the first of the year. This is marked by a number of withdrawals and with reduced prices on Bartlett pears, DeLuxe plums, fresh prunes, and some sweet pickled fruits. Withdrawals include the following: Buffet and No. 10 apricots; No. 1 and No. 2½ Royal Anne cherries; No. 10 Muscat grapes; No. 2½ Melba halves and Banquet halves, cling peaches; No. 1, No. 2 and No. 2½ egg plums and No. 2½ green gage plums; No. 10 blackberries and red raspberries, and Buffet strawberries. The entire pear list has been reduced, and the quotations now are: Buffet, 65 cents; No. 1 tall, $1.10; No. 2 tall, $1.30; No. 2½, $1.65, and No. 10, $5.75. Melba halves are quoted at $1.65 for No. 2½s and $5.75 for No. 10s. Sliced pears are quoted at 62½ cents for Buffet, $1.05 for No. 1 tall, $1.25 for No. 2 tall, and $1.60 for No. 2½. The reductions range from 5 cents a dozen on the smaller sizes to 50 cents a dozen on No. 10s. Similar reductions have been made on De Luxe plums and fresh prunes, now listed as follows: Buffet, 47½ cents; No. 1 tall, 75 cents; No. 2 tall, 94 cents; No. 2½, $1.10, and No. 10, $3.50.

STRING BEANS—Opening prices on 1937 pack of Kentucky Wonder string beans packed by the San Jose Canning Company, of San Jose, Calif., were brought out recently. Particia brand, packed in asparagus style in keyless cans, are quoted at 97½ cents for 8-oz. and $1.75 for No. 2s, small sieve, and $1.65 for No. 2s, medium sieve. Fancy whole baby beans, 1 and 2 sieve, packed regulation style, are quoted at $1.35 for No. 2s and $6.50 for No. 10s; fancy long cut at $1.05 and $5.00, respectively, for these sizes; choice cut, 95 cents and $4.50; standard cut, 85 cents and $4.00; large standards, 70 cents and $3.50; soup tips, 70 cents and $3.50, and cuts from asparagus style, 95 cents and $4.50.

LEGUME BACTERIA INOCULATION OF COPPER OXIDE GRAPHITE TREATED SEED

By A. W. Hofer

Before New York State Extension School for Canners, Growers and Fieldmen at Geneva, N. Y., March 1, 2 and 3, 1937

DURING the past few years investigations have been carried out on the possibility of successful inoculation of copper oxide treated seed peas. Although there have been some indications that legume bacteria, copper and graphite can be applied simultaneously to the seed, in the main the results have been unfavorable. Experiments have shown the necessity for a great deal of care in regard to the conditions under which any additional application is made to copper and graphite treated seeds. If inoculation is applied to such seed, there is great danger that it will simply have the effect of removing the other materials. When this occurs, most of the material settles down rather quickly to the bottom of the drill.

In the case of agar cultures, the bacteria are killed when the moist suspension is mixed with the graphite and copper. There is a possibility that methods might be found to keep peat or sand on the seed with the copper and graphite, but even if the basteria were not killed under these conditions, it is likely that the rate of drilling of such seeds would be distinctly retarded. Examples are shown of seeds treated by the different methods.

In an experiment on sweet corn in Middlesex County, N. J., application of the fertilizer over the row after planting, which is a common method of application in that county, gave a yield of 5,994 ears at the first picking, and application at the side of the row at planting gave a yield of 8,186 ears at the first picking.

In an experiment with peas in Burlington County, N. J., application of fertilizer according to the common method resulted in a yield of 93 bushels to the acre; whereas application of the same quantity of fertilizer in bands resulted in a yield of 165 bushels to the acre. In another experiment in the same county, the increase for the band method of application amounted to 32 bushels to the acre. In a third experiment, an increase of 50 bushels was obtained.

In an experiment with green beans in Middlesex County, N. J., an increase of 70 bushels to the acre was obtained when the fertilizer was applied in bands as compared to application by the ordinary method.

The experiments and others that have been conducted in various localities are indicative of the results that growers may expect from the new methods of application as compared to methods still employed in many localities.

THE USE OF SACCHARINE

IN certain metropolitan districts the use of saccharine for sweetening of pickles has been discovered. The secretary of the National Pickle Packers Association informs us that none of the members of that organization have been using saccharine for sweetening purposes, and in order to clarify the situation for non-member firms the following ruling was received by the National Pickle Packers Association on March 3 from the U. S. Department of Agriculture, Food and Drug Administration:

"The use of saccharine in pickles and other foods is not permitted under the terms of the Federal Food and Drugs Act.

(Signed) C. W. CRAWFORD, Acting Chief,
Food and Drug Administration,
U. S. Department of Agriculture."

The above ruling should clarify the situation with regard to the use of saccharine in sweet pickles and for sweetening purposes.

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THE PRESENT STATUS OF THE SUGAR PROBLEM WITH NON-ACID FOODS

(Continued from page 8)

gredient. It has been especially difficult to induce development of sulfide spoilage in this way, yet in this case, four cans showed spoilage—all of them from the lot put up with the contaminated starch. Beyond this, there has been the contrast which has been emphasized in sugar experiments. In the significant processes of 60 and 70 minutes at 250° F. no spoilage occurred with the "no starch," lot or the "low count" lot. The "high count" starch, however, induced spoilage in both processes. In the case of the lowest process of 45 minutes, there was a marked contrast between spoilage results for the "high count" lot, and the others.

While the contamination of sugar and starch is established as significant, increasing consideration is being given to other ingredients of canned foods. Spoilage has been traced to flour of one type or another in spaghetti, beans, and chowders, and such ingredients as dried milk and mushrooms have been suspected of causing spoilage in creamed soups. It is expected that over the next period of four or five years, considerable progress will be made in further defining the importance of contamination control for ingredients of all types.

- - -

Mother: Well, son, what have you been doing all afternoon?

Son: Shooting craps, mother.

Mother: That must stop. Those little things have as much right to live as you have.

- - -

Eugene: Willie, what's the idea of wearing a woman's nightgown aboard ship?

Willie: Suppose something happens to the ship—women and children first, you know!

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AGICIDE LABORATORIES
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CANNING MACHINERY
SCOTT IMPROVED VINERS—VINER FEEDERS
founders of
HYDRAULIC CONVEYING EQUIPMENT
THE SCOTT VINER CO. COLUMBUS, O

CANNED FOOD PRICES

All Prices quoted F. O. B. Factory

Prices given represent the high and low canners' selling price of the current week, subject to customary cash discounts. Quotations per dozen unless otherwise noted. "Eastern" quotations for Atlantic Coast States east of Ohio River; "Central": Central States West of Ohio River to Mountain States; "West Coast": Mountain and Pacific Coast States.

Quotations on this page are for spot goods. For future quotations see market reports.

Canned Vegetables

	Eastern Low	Eastern High	Central Low	Central High	West Coast Low	West Coast High
ASPARAGUS						
White Colossal, No. 2½	.....	.....	.....	.....	2.75	2.85
Large, No. 2½	.....	.....	.....	.....	2.80	2.90
Medium, No. 2½	.....	.....	.....	.....	2.75	2.85
Green Mam., No. 2 ro. cans	.....	.....	.....	.....	2.40	2.50
Medium, No. 1 tall	.....	.....	.....	.....	1.85	1.85
Large, No. 2	.....	.....	.....	.....	2.35	2.45
Tips, White, Mam. No. 1 sq.	.....	.....	.....	.....	2.60	2.70
Small, No. 1 sq.	.....	.....	.....	.....	2.35	2.45
Green Mam., No. 1 sq.	.....	.....	.....	.....	2.40	2.50
Small, No. 1 sq.	.....	.....	.....	.....	2.10	2.20
BAKED BEANS						
16 oz.	.57½	.60	.62½	.65	.....	.....
No. 2½	1.05	1.35	1.10	1.20	.....	.....
No. 10	4.25	4.25	3.85	4.00	.....	.....
STRINGLESS BEANS						
Fancy Cut Green, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. Cut Green, No. 2	.90	1.00	.....	.....	.....	.....
No. 10	4.50	5.00	.....	.....	.....	.....
Std. Cut Green, No. 2	.85	.90	.90	.95	.85	.90
No. 10	4.25	4.25	.....	.....	.....	4.25
Fancy Whole Green, No. 2	.....	.....	.....	.....	.....	.....
No. 10	6.00	6.50	.....	.....	.....	.....
Ex. Std. Whole Green, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std. Whole Green, No. 2	.....	1.25	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Fancy Cut Wax, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. Cut Wax, No. 2	.....	1.20	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std. Cut Wax, No. 2	.....	1.10	.....	.....	.85	.....
No. 10	.....	5.50	.....	.....	4.25	.....
Fancy Whole Wax, No. 2	.....	1.75	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. Whole Wax, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std. Whole Wax, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Red Kidney, Std. No. 2	.80	.85	.80	.85	.85	.....
No. 10	3.85	4.50	3.75	4.00	4.25	.....
LIMA BEANS						
No. 2 Tiny Green	1.60	1.62½	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
No. 2 Medium Green	1.35	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
No. 2 Green & White	.85	1.00	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
No. 2 Fresh White	.82½	.85	.....	.....	.....	.....
No. 10	3.25	.....	.....	.....	.....	.....
No. 2 Soaked	.67½	.70	.....	.75	.....	.....
BEETS						
Whole, No. 2	1.00	.....	.....	.....	1.40	.....
No. 2½	1.20	.....	.90	1.10	1.35	.....
Std. Cut, No. 2	.85	.85	.....	.....	.....	.....
No. 2½	1.00	1.15	.....	.....	.....	.....
No. 10	4.00	4.25	.....	.....	.....	.....
Ex. Std. Cut, No. 2	.....	.....	.72½	.77½	.....	.....
No. 2½	.....	.....	.....	.....	.....	.....
No. 10	4.25	4.25	.....	.....	.....	.....
Std. Sliced, No. 2	.95	.95	.....	.....	.85	.90
No. 2½	1.15	1.15	.....	.....	1.10	.....
No. 10	4.50	4.50	.....	.....	3.35	.....
Ex. Std. Sliced, No. 2	.....	.....	.82½	.85	.95	.....
No. 10	.....	.....	.....	.....	3.60	.....
CARROTS						
Std. Sliced, No. 2	.....	.....	.....	.....	.....	.....
No. 10	4.50	4.50	.....	.....	.....	.....
Std. Diced, No. 2	.75	.75	.....	.....	.....	.....
No. 10	3.75	3.75	.....	.....	.....	.....
PEAS AND CARROTS						
Std. No. 2	.70	.85	.....	.....	.....	.....
Fancy No. 2	1.10	1.15	.....	.....	.....	.....
CORN—Wholegrain						
Yellow, Fancy No. 2	1.20	1.40	1.25	1.35	.....	.....
No. 10	6.50	7.00	.....	.....	.....	.....
Ex. Std. No. 2	1.15	1.20	1.15	1.20	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std. No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....

CANNED VEGETABLES—Continued

Wholegrain—Continued	Eastern Low	Eastern High	Central Low	Central High	West Coast Low	West Coast High
White, Fancy No. 2	1.00	1.15	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. No. 2	.95	1.10	1.10	.....	.....	.....
No. 10	6.65	.....	.....	.....	.....	.....
Std. No. 2	.87½	.90	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
CORN—Creamstyle						
Yellow, Fancy No. 2	1.15	1.25	.....	1.25	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. No. 2	1.10	.....	1.05	1.15	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std. No. 2	.97½	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
White, Fancy No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. No. 2	.95	1.00	1.00	1.10	.....	.....
No. 10	.....	.....	5.50	.....	.....	.....
Std. No. 2	.85	.90	.95	1.00	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
HOMINY						
Std. Split, No. 1, Tall	.....	.....	.....	.....	.....	.....
No. 2½	.80	.90	.75	.80	.....	.....
No. 10	.....	.....	2.25	2.60	.....	.....
MIXED VEGETABLES						
Fcy., No. 2	.85	.90	.....	.....	.....	.....
No. 10	4.25	4.50	.....	.....	.....	.....
Std., No. 2	.65	.75	.....	.....	.....	.....
No. 10	3.75	4.00	.....	.....	.....	.....
OKRA AND TOMATOES						
Std., No. 2	.95	.95	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
PEAS						
No. 2 Fancy Sweets, 2s	.....	.....	1.35	1.65	1.35	1.45
No. 2 Fancy Sweets, 3s	.....	.....	1.25	1.50	1.35	1.40
No. 2 Fancy Sweets, 4s	.....	.....	1.15	1.40	1.20	1.30
No. 2 Fancy Sweets, 5s	.....	.....	1.15	1.35	1.15	1.25
No. 2 Ex. Std. Sweets, 2s	.....	.....	1.20	1.40	1.20	1.30
No. 2 Ex. Std. Sweets, 3s	.....	.....	1.10	1.40	1.15	1.25
No. 2 Ex. Std. Sweets, 4s	.....	.....	1.05	1.35	1.15	1.20
No. 2 Ex. Std. Sweets, 5s	.....	.....	1.00	1.25	1.10	1.15
No. 2 Std. Sweets, 2s	.....	.....	1.10	1.25	.....	.....
No. 10 Std. Sweets, 2s	.....	.....	.....	.....	.....	.....
No. 2 Std. Sweets, 3s	.....	.....	.95	1.25	1.15	1.20
No. 10 Std. Sweets, 3s	.....	.....	.....	.....	5.25	5.25
No. 2 Std. Sweets, 4s	.....	.....	.90	1.00	1.00	1.10
No. 10 Std. Sweets, 4s	.....	.....	.....	5.75	5.00	5.25
No. 2 Std. Sweets, 5s	.....	.....	.90	1.00	1.10	1.20
No. 10 Std. Sweets, 5s	.....	.....	.....	.....	4.50	4.50
No. 2 Fcy. Alaskas, 1s	.....	.....	1.50	1.85	.....	.....
No. 2 Fcy Alaskas, 2s	.....	.....	1.40	1.75	1.35	1.45
No. 2 Fcy. Alaskas, 3s	.....	.....	1.20	1.40	1.25	1.35
No. 2 Ex. Std. Alaskas, 1s	1.50	1.50	1.15	1.50	.....	.....
No. 2 Ex. Std. Alaskas, 2s	1.20	1.30	1.15	1.40	1.20	1.40
No. 2 Ex. Std. Alaskas, 3s	1.00	1.00	1.00	1.10	1.15	1.25
No. 2 Ex. Std. Alaskas, 4s	.95	.95	.95	1.10	1.05	1.10
No. 2 Ex. Std. Alaskas, 5s	.....	.....	.....	.....	1.00	1.05
No. 2 Std. Alaskas, 3s	.92½	1.00	.90	1.00	1.05	1.10
No. 10 Std. Alaskas, 3s	5.50	.....	.....	.....	5.25	5.50
No. 2 Std. Alaskas, 4s	.90	.95	.90	1.00	1.00	1.05
No. 10 Fcy. Alaskas, 4s	.....	.....	.....	.....	.....	.....
No. 10 Ex. Std. Alaskas, 3s	.....	.....	5.25	5.50	.....	.....
No. 10 Std. Alaskas, 4s	5.00	5.25	.....	.....	5.00	5.50
No. 2 Std. Alaskas, 5s	.....	.....	.....	.....	1.00	1.05
No. 10 Std. Alaskas, 5s	.....	.....	.....	.....	4.50	4.75
No. 2 Ungraded	.90	.92½	.90	1.00	.95	1.00
Soaked, 2s	.45	.50	.55	.60	.55	.57½
10s	2.50	2.75	.....	.....	3.20	3.40
Blackeye, 2s, Soaked	.75	.75	.....	.....	.....	.....
10s	3.50	3.75	.....	.....	.....	.....
PUMPKIN						
Std., No. 2	.....	.....	.52½	.70	.70	.75
Std., No. 2½	.90	1.15	.67½	1.00	.....	.....
No. 3	.95	.....	.....	.....	.....	.....
No. 10	.....	.....	2.50	3.00	2.75	3.00
SAUER KRAUT						
Std., No. 2	.....	.....	.75	.85	.....	.....
No. 2½	.90	1.05	.90	.95	.....	.....
No. 3	.....	.....	.....	.....	.....	.....
No. 10	2.90	.....	3.10	3.25	.....	.....
SPINACH						
Std., No. 2	.80	.95	.67½	.75	1.05	1.10
No. 2½	1.15	1.25	.90	.95	1.17½	1.40
No. 10	3.75	4.00	3.00	3.25	4.05	4.20
SUCCOTASH						
Std. No. 2, Gr. Corn, Dr. Limas	1.05	.....	.....	.....	.....	.....
Std. No. 2, Gr. Corn, Fr. Limas	1.20	.....	.....	.....	.....	.....
Triple, No. 2	.90	1.00	.....	.....	.....	.....

CANNED FRUITS—Continued

	Eastern Low	Eastern High	Central Low	Central High	West Coast Low	West Coast High
SWEET POTATOES						
Std., No. 2, Dry Pack	.75	.....	.....	.....	.....	.....
No. 2½	1.10	.....	.....	.....	.....	.....
No. 3	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std., No. 2, Syrup Pack	.....	.....	.....	.....	.....	.....
No. 2½	1.20	.....	.....	.....	.....	.....
No. 3	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
TOMATOES					Solid Pack	
Fancy, No. 2	.90	.....	.....	.....	.95	1.00
No. 2½	.....	.....	.....	.....	1.10	1.45
No. 3	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	3.25	4.50
Ex. Std., No. 1	.47½	.....	.50	.55	.....	.....
No. 2	.75	.85	.77½	.80	.....	.....
No. 2½	1.05	1.15	1.05	1.15	.....	.....
No. 3	1.15	1.25	.....	.....	.....	.....
No. 10	3.50	3.50	3.50	3.75	.....	.....
					With puree	
Std., No. 1	.45	.45	.47½	.50	.60	.62½
No. 2	.70	.70	.72½	.77½	.85	.70
No. 2½	.95	1.00	1.00	1.05	.85	.87½
No. 3	1.10	1.10	.....	.....	.....	.....
No. 10	3.30	3.30	3.50	3.50	2.75	3.00
TOMATO PUREE						
Std., No. 1, Who. St. 1.04	.42½	.....	.45	.47½	.....	.....
No. 10	3.25	.....	3.25	4.00	3.50	3.60
Std., No. 1, Trim 1.035	.40	.....	.....	.....	.....	.....
No. 10	3.00	3.00	.....	.....	3.00	3.25
TOMATO JUICE						
No. 1	.40	.40	.45	.50	.60	.62½
No. 2	.70	.70	.70	.75	.77½	.80
No. 10	2.60	3.00	2.75	3.25	3.00	3.25
TURNIP GREENS						
No. 2	.75	.....	.....	.....	.....	.....
No. 2½	.85	.....	.....	.....	.....	.....
No. 10	3.75	3.75	.....	.....	.....	.....

Canned Fruits

APPLES						
No. 10, water	.....	.....	.....	.....	.....	.....
No. 10, standard heavy pack	4.00	4.10	.....	.....	3.50	4.00
No. 10 fancy heavy pack	4.25	4.50	.....	.....	4.50	.....
APPLE SAUCE						
No. 2 Fancy	.82½	1.00	.90	1.00	.....	.....
No. 10	4.35	5.00	.....	.....	.....	.....
No. 2, Std.	.70	.....	.....	.....	.....	.....
No. 10	.....	.....	4.50	4.75	.....	.....
APRICOTS						
No. 2½, Fancy	.....	.....	.....	.....	1.90	2.00
No. 2½, Choice	.....	.....	.....	.....	1.70	1.80
No. 2½, Std.	.....	.....	.....	.....	1.45	1.50
GRAPEFRUIT						
8 oz.	.....	.....	.....	.....	.45	.....
No. 2	.95	1.00	.....	.....	.87½	.95
No. 5	3.10	.....	.....	.....	2.65	2.75
GRAPEFRUIT JUICE						
8 oz.	.52½	.....	.....	.....	.....	.....
No. 1	.....	.....	.....	.....	.....	.....
No. 300	.80	.80	.....	.....	.....	.....
No. 2	.72½	.85	.....	.....	.70	.80
No. 5	2.50	2.75	.....	.....	2.10	2.25
PEARS						
Keifer, Std., No. 2, in syrup	1.00	1.00	.....	.....	.....	.....
No. 2½	1.35	1.35	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Bartlett, Fancy, No. 2½	.....	.....	.....	.....	1.75	1.85
Choice, No. 2½	.....	.....	.....	.....	1.55	1.75
Std., No. 2½	.....	.....	.....	.....	1.40	1.45
No. 10, Water	.....	.....	.....	.....	.....	4.00
No. 10, Syrup	.....	.....	.....	.....	5.50	5.75
No. 10 Pie, S. P.	.....	.....	.....	.....	.....	3.75
PEACHES						
Fcy., Y. C., No. 2½	.....	.....	.....	.....	1.70	1.75
Choice, No. 2½	.....	.....	.....	.....	1.55	1.65
Std., No. 2½	.....	.....	.....	.....	1.45	1.50
Ex. Std., Slic. Yel., No. 1 Talls	.....	.....	.....	.....	1.10	1.15
Seconds, Yel., No. 2	.....	.....	.....	.....	.....	.....
Pies, unpeeled, No. 2	.....	.....	.....	.....	.....	.....
Peeled, No. 10, Solid Pack	.....	.....	.....	.....	4.75	5.00
PINEAPPLE						
Hawaiian, Slic., Ex. Std., No. 2	.....	.....	.....	.....	1.50	.....
No. 2½	.....	.....	.....	.....	1.80	.....
Std., No. 2	.....	.....	.....	.....	1.40	.....
No. 2½	.....	.....	.....	.....	1.70	.....
Sliced, Standard, No. 10	.....	.....	.....	.....	5.85	6.10
Shredded, Syrup, No. 10	.....	.....	.....	.....	.....	.....
Crushed, Ex. Std., No. 10	.....	.....	.....	.....	5.00	6.00
PINEAPPLE JUICE						
Buffet	.....	.....	.....	.....	.52½	.55
No. 211	.....	.....	.....	.....	.70	.75
No. 2	.....	.....	.....	.....	1.10	1.15
No. 2½	.....	.....	.....	.....	1.45	1.55
46 oz.	.....	.....	.....	.....	2.50	2.65
No. 10	.....	.....	.....	.....	5.00	5.25

CANNED FRUITS—Continued

	Eastern Low	Eastern High	Central Low	Central High	West Coast Low	West Coast High
FRUITS FOR SALAD						
Fcy., No. 2½	.....	.....	.....	.....	2.45	2.55
No. 10	.....	.....	.....	.....	3.50	3.75
BLACKBERRIES						
Std., No. 2	.....	.....	.....	.....	.....	.....
No. 3	.....	.....	.....	.....	.....	.....
No. 10, water	.....	.....	.....	.....	.....	.....
No. 2, Preserved	.....	.....	.....	.....	.....	.....
No. 2, Syrup	.....	.....	.....	.....	.....	.....
BLUEBERRIES						
No. 2	1.75	1.85	.....	.....	.....	.....
No. 10	7.00	7.00	9.50	10.00	.....	.....
CHERRIES						
Std., Red, Water, No. 2	.....	.....	.....	.....	.....	.....
Std., White, Syrup, No. 2	.....	.....	.....	.....	.....	.....
Ex. Std., Preserved, No. 2	.....	.....	.....	.....	.....	.....
Red Sour Pitted, No. 2	1.30	1.35	.....	.....	.....	.....
Red Sour Pitted, No. 10	.....	.....	10.00	12.00	.....	.....
R. A., Fcy., No. 2½	.....	.....	.....	.....	2.45	2.50
Choice, No. 2½	.....	.....	.....	.....	2.25	2.35
Std., No. 2½	.....	.....	.....	.....	2.00	2.10
GOOSEBERRIES						
Std., No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	6.00	6.00
RASPBERRIES						
Black, Water, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Red, Water, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	6.50
Black, Syrup, No. 2	.....	.....	.....	.....	.....	.....
Red, Syrup, No. 2	.....	.....	.....	.....	.....	.....
STRAWBERRIES						
Ex. Pres., No. 1	.....	.....	.....	.....	.....	.....
No. 2	.....	.....	.....	.....	.....	.....
Pres., No. 1	.....	.....	.....	.....	.....	.....
No. 2	.....	.....	.....	.....	.....	.....
Std., Water, No. 10	.....	.....	.....	.....	.....	.....

Canned Fish

HERRING ROE						
10 oz.	1.50	1.50	.....	.....	.....	.....
No. 2, 17 oz.	1.75	1.75	.....	.....	.....	.....
No. 2, 19 oz.	2.00	2.00	.....	.....	.....	.....
LOBSTER						
Flats, 1 lb.	6.50	6.50	.....	.....	.....	.....
½ lb.	3.25	3.25	.....	.....	.....	.....
¼ lb.	1.95	1.95	.....	.....	.....	.....
OYSTERS						
Std., 4 oz.	.95	1.00	.....	.....	.....	.....
5 oz.	1.05	1.10	.....	.....	.....	.....
8 oz.	1.90	2.00	.....	.....	.....	.....
10 oz.	2.10	2.15	.....	.....	.....	.....
Selects, 6 oz.	.....	.....	.....	.....	.....	.....
SALMON						
Red Alaskas, Tall, No. 1	.....	.....	.....	.....	.....	2.25
Flat, No. ½	.....	.....	.....	.....	1.50	1.55
Cohoes, Tall, No. 1	.....	.....	.....	.....	.....	1.75
Flat, No. 1	.....	.....	.....	.....	1.90	1.90
No. ½	.....	.....	.....	.....	1.15	1.15
Pink, Tall, No. 1	.....	.....	.....	.....	1.10	.....
Flat, No. ½	.....	.....	.....	.....	.75	.75
Sockeye Flat, No. 1	.....	.....	.....	.....	2.65	2.65
No. ½	.....	.....	.....	.....	1.75	1.85
Chums, Tall, No. 1	.....	.....	.....	.....	1.90	.....
Medium, Red, Tall	.....	.....	.....	.....	1.70	.....
SHRIMP						
No. 1, Small	.....	.....	1.45	1.47½	.....	.....
No. 1, Medium	.....	.....	1.45	1.60	.....	.....
No. 1, Large	.....	.....	1.60	1.62½	.....	.....
SARDINES (Domestic), Per Case						
¼ Oil, Key	3.60	3.60	.....	.....	.....	.....
¼ Oil, Keyless	3.25	3.35	.....	.....	.....	.....
¼ Oil, Tomato, Carton	.....	.....	.....	.....	.....	.....
¼ Oil, Carton	3.90	3.90	.....	.....	.....	.....
¼ Mustard, Keyless	2.75	2.85	.....	.....	.....	.....
Calif. Oval No. 1, 24's	.....	.....	.....	.....	1.40	1.55
Calif. Oval No. 1, 48's	.....	.....	.....	.....	2.75	3.00
TUNA FISH, Per Case						
Fcy., Yel., 1s, 24's	.....	.....	.....	.....	.....	6.02½
Fcy., Yel., 1s, 48's	.....	.....	.....	.....	11.00	12.00
½s	.....	.....	.....	.....	.....	6.00
¼s	.....	.....	.....	.....	3.85	4.25
Light Meat, 1s	.....	.....	.....	.....	9.00	10.00
½s	.....	.....	.....	.....	5.00	5.50
¼s	.....	.....	.....	.....	3.50	3.75

WHERE TO BUY

——— the Machinery and Supplies you need, and the Leading Houses that supply them. Consult the advertisements for details.

ADHESIVES.
Dewey & Almy Chemical Co., Cambridge, Mass.
F. G. Findley Co., Milwaukee, Wis.

ADJUSTERS for Detachable Chains.
Frank Hamachek Mach. Co., Kewaunee, Wis.

BASKETS, Picking.
Planters Mfg. Co., Portsmouth, Va.
Riverside Manufacturing Co., Murfreesboro, N. C.
Baskets, Wire, Scalding, Pickling, etc. See Cannery Supplies.

BEAN SNIPPER, Green String.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

BEET MACHINERY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.
Scott Viner Co., Columbus, Ohio.

BELTS, Carrier, Rubber, Wire, Etc.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
La Porte Mat and Mfg. Co., La Porte, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

BLANCHERS, Vegetable and Fruit.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

BOILERS AND ENGINES, Steam.
Berlin-Chapman Co., Berlin, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.

BOOKS, on Canning, Formula, Etc.
A Complete Course in Canning.
How to Buy and Sell Canned Foods.
A History of the Canning Industry.
The Almanac of the Canning Industry.
All published by The Canning Trade, Baltimore.
Bottle Caps. See Caps.
Bottle Cases, Wood. See Boxes, Crates.
Bottle Corking Machines. See Bottlers Mchy.

BOX (Corrugated) SEALING MACHINES.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

BOXES, Corrugated Liner-Joint.
David Weber & Co., Philadelphia, Pa.

BOXES, Lug, Field, Metal.
Berlin-Chapman Co., Berlin, Wis.
Frank Hamachek Mach. Co., Kewaunee, Wis.

BOXING MACHINES.
Burt Machine Co., Baltimore, Md.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.
Westminster Mach. Co., Westminster, Md.

BROKERS.
Phillips Sales Co., Cambridge, Md.
Buckets and Pails, Fibre. See Corr. Paper Products.
Buckets and Pails, Metal. See Enameled Buckets.
Buckets, Wood. See Cannery Supplies.

BURNERS, Oil, Gas, Gasoline, Etc.
A. K. Robins & Co., Inc., Baltimore, Md.
Can Conveyors. See Conveyors and Carriers.
Can Fillers. See Filling Machines.

CAN MAKERS' MACHINERY.
Cameron Can Mchy. Co., Chicago, Ill.
Can Markers. See Stampers and Markers.

CANNED FOODS.
Indiana Canners Association, Indianapolis, Ind.
Phillips Packing Co., Cambridge, Md.
Phillips Sales Co., Cambridge, Md.

CANS, Tin, All Kinds.
American Can Co., New York City.
Continental Can Co., New York City.
Crown Can Co., Philadelphia, Pa.
Heekin Can Co., Cincinnati, Ohio.
National Can Co., Inc., New York-Baltimore.
Phelps Can Co., Baltimore, Md.
Phillips Can Co., Cambridge, Md.

CAN SEALING COMPOUND.
Dewey & Almy Chemical Co., Cambridge, Mass.

CAN TESTING MACHINERY.
Cameron Can Machinery Co., Chicago, Ill.

CAN WASHING MACHINES.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.

CANNERY SUPPLIES.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Sinclair-Scott Co., Baltimore, Md.
Can Stampers. See Stampers and Markers.

CAPPING MACHINES, Soldering.
Ayars Machine Co., Salem, N. J.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
Capping Steels, Soldering. See Cannery Sup.

CARRIERS AND CONVEYORS, Spiral.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
Catsup Machinery. For the preparatory work: see Pulp Mchy.; for bottling: see Bot. Mchy.

CHAIN ADJUSTERS.
F. Hamachek Machine Co., Kewaunee, Wis.
Chain Belt Conveyors. See Conveyors.
Chain for Elevating, Conveying. See Conveyors.
Checks, Employers' Time. See Stencils.
Chutes, Gravity, Spiral. See Carriers.

CLEANING AND GRADING MACHY., Fruits.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
Sinclair-Scott Co., Baltimore, Md.
Cleaning and Washing Machines, Bottle. See Bottlers' Machinery.
Cleaning Machines, Can. See Can Washers.

CLOCKS, Process Time.
Ayars Machine Co., Salem, N. J.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

CLOSING MACHINES, Open Top Cans.
Cameron Can Mchy. Co., Chicago, Ill.
Coils, Copper. See Copper Coils.

CONVEYORS AND CARRIERS, Canners.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
La Porte Mat & Mfg. Co., La Porte, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Scott Viner Co., Columbus, Ohio.

COOKERS, Continuous, Agitating.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
Cookers, Retorts. See Kettles, Process.

COOLERS, Continuous.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

COPPER COILS, for tanks.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Copper Jacketed Kettles. See Kettles, Copper.

CORN COOKER-FILLERS.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.

CORN CUTTERS.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
Morral Bros., Morral, Ohio.
A. K. Robins & Co., Inc., Baltimore, Md.
The United Co., Westminster, Md.

CORN HUSKERS AND SILKERS.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
Morral Bros., Morral, Ohio.
A. K. Robins & Co., Inc., Baltimore, Md.
The United Co., Westminster, Md.

CORN SHAKERS.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

CRANES AND CARRYING MACHINES.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

CRATES, Iron Process.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

CUTTERS, Vegetable, Mincemeat, Etc.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

DECORATED TIN (or Cans, Caps, Etc.).
American Can Co., New York City.
Continental Can Co., New York City.
Crown Can Co., Philadelphia, Pa.
National Can Co., New York-Baltimore.

DUSTS & SPRAYS (insect control).
Agicide Laboratories, Milwaukee, Wis.

ENAMELED BUCKETS, PAILS, Etc.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Engines, Steam. See Boilers and Engines.

ENSILAGE DISTRIBUTORS.
Frank Hamachek Mach. Co., Kewaunee, Wis.

EVAPORATING MACHINERY.
Berlin-Chapman Co., Berlin, Wis.

EXHAUST BOXES.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

FACTORY TRUCKS.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

FIBRE CONTAINERS for Food (not hermetically sealed).
American Can Co., New York City.
Continental Can Co., New York City.
Filling Machines, Bottles. See Bottlers' Mchy.

FILLING MACHINES, Can.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
E. J. Judge, Alameda, Cal.
A. K. Robins & Co., Inc., Baltimore, Md.

FINISHING MACHINES, Catsup, Etc.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

GENERAL AGENTS for Machinery Mfrs.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

GLASS LINED TANKS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Gravity Carriers. See Carriers and Conveyors.
Hoisting and Carrying Machines. See Cranes.
Hullers and Viners. See Pea Hullers.
Huskers and Silkers. See Corn Huskers.

WHERE TO BUY — Continued

HYDRAULIC CONVEYING EQUIPMENT.
Berlin-Chapman Co., Berlin, Wis.
Scott Viner Co., Columbus, Ohio.

INSECTICIDES.
Agicide Laboratories, Milwaukee, Wis.

INSURANCE, Canners.
Canners' Exchange, Lansing B. Warner, Chicago.
Jacketed Kettles. See Kettles, Copper.

JACKETED PANS, Steam.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

KETTLES, Copper, Plain or Jacketed.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Kettles, Enameled. See Glass-Lined Tanks.

KETTLES, Process.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

KNIVES, Miscellaneous.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Sinclair-Scott Co., Baltimore, Md.

KRAUT CUTTERS.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

KRAUT MACHINERY.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.

LABELING MACHINES.
Burt Machine Co., Baltimore, Md.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
Morral Bros., Morral, Ohio.
A. K. Robins & Co., Inc., Baltimore, Md.
Westminster Mach. Co., Westminster, Md.

LABEL MANUFACTURERS.
Gamse Litho. Co., Baltimore, Md.
Lehmann Printing & Litho. Co., San Francisco, Cal.
Piedmont Label Co., Bedford, Va.
Simpson & Doeller Co., Baltimore, Md.
U. S. Printing & Lithograph Co., Cincinnati, Ohio.

LABORATORIES, for Analyses of Goods, Etc.
National Canners Assn., Washington, D. C.

MILK CONDENSING AND CANNING MCHY.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.

OYSTER CANNERS' MACHINERY.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

PAILS (Rubber).
Dewey & Almy Chemical Co., Cambridge, Mass.

PASTE, CANNERS'.
Burt Machine Co., Baltimore, Md.
Dewey & Almy Chemical Co., Cambridge, Mass.
F. G. Findley Co., Milwaukee, Wis.
F. H. Langsenkamp & Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

PEA HULLERS AND VINERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. Hamachek Mach. Co., Kewaunee, Wis.
Scott Viner Co., Columbus, Ohio.
Sinclair-Scott Co., Baltimore, Md.

PEA AND BEAN SEED.
Associated Seed Growers, Inc., New Haven, Conn.
Gallatin Valley Seed Co., Bozeman, Mont.
D. Landreth Seed Co., Bristol, Pa.
Leonard Seed Co., Chicago, Ill.
Rogers Bros. Seed Co., Chicago, Ill.
F. H. Woodruff & Sons, Milford, Conn.

PEA CANNERS' MACHINERY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. Hamachek Mach. Co., Kewaunee, Wis.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.
Scott Viner Co., Columbus, Ohio.
Sinclair-Scott Co., Baltimore, Md.

PEA VINE FEEDERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. Hamachek Mach. Co., Kewaunee, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.
Scott Viner Co., Columbus, Ohio.

PEELING KNIVES.
Ayars Machine Co., Salem, N. J.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

PEELING TABLES, Continuous.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

PINEAPPLE MACHINERY.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

PRESERVERS' MACHINERY.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

PULP MACHINERY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

PUMPS, Air, Water, Brine, Syrup.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

SEALING MACHINES, Box.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

SCALDERS, Tomato, Etc.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

Scalding and Picking Baskets. See Baskets.
Sealing Machines, Bottles. See Bottlers' Mchy.

SEEDS, Canners', All Varieties.
Associated Seed Growers, Inc., New Haven, Conn.
Gallatin Valley Seed Co., Bozeman, Mont.
D. Landreth Seed Co., Bristol, Pa.
Leonard Seed Co., Chicago, Ill.
O. & M. Seed Co., Green Springs, Ohio.
Rogers Bros. Seed Co., Chicago, Ill.
F. H. Woodruff & Sons, Milford, Conn.

SHEET METAL WORKING MACHINERY.
Cameron Can Mchy. Co., Chicago, Ill.

SIEVES AND SCREENS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

SILKING MACHINES.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
The United Co., Westminster, Md.

SPEED REGULATING DEVICES (for Machines. Belt Drives, Etc.).
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
E. J. Judge, Alameda, Cal.
A. K. Robins & Co., Inc., Baltimore, Md.

SPRAYS & DUSTS (insect control).
Agicide Laboratories, Milwaukee, Wis.

STENCILS, Marking Pots and Brushes, Brass Checks, Rubber and Steel Type, Burning Brands, Etc.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

Steam Jacketed Kettles. See Kettles.
Steam Retorts. See Kettles, Process.

STIRRERS FOR KETTLES.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.

STRING BEAN MACHINERY.
Berlin-Chapman Co., Berlin, Wis.
B. I. Buck Co., Baltimore, Md.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

SYRUPING MACHINES.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
E. J. Judge, Alameda, Calif.
A. K. Robins & Co., Inc., Baltimore, Md.

Tables, Picking. See Canners' Machinery.

TANKS, Metal.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

TANKS, Glass Lined, Steel.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.

TANKS, Wooden.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

TOMATO CANNING MACHINERY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

TOMATO JUICE MACHINERY.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

TOMATO PEELING MACHINE.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

TOMATO SEED.
Associated Seed Growers, Inc., New Haven, Conn.
Indiana Canners Association, Indianapolis, Ind.
D. Landreth Seed Co., Bristol, Pa.
Leonard Seed Co., Chicago, Ill.
C. A. Shuttleworth Seed Co., Matthews, Ind.
Francis C. Stokes & Co., Inc., Moorestown, N. J.
F. H. Woodruff & Sons, Milford, Conn.

TOMATO WASHERS.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

VEGETABLE CUTTERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

VINERS AND HULLERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Frank Hamachek Mach. Co., Kewaunee, Wis.
Scott Viner Co., Columbus, Ohio.
Sinclair-Scott Co., Baltimore, Md.

Washers, Bottles. See Bottlers' Machinery.

WASHERS, Can and Jar.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.

WASHERS, Fruit, Vegetable.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
Scott Viner Co., Columbus, Ohio.
Sinclair-Scott Co., Baltimore, Md.

Windmills and Water Supply Systems. See Tanks, Wood.

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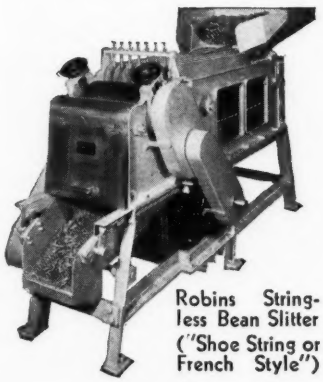

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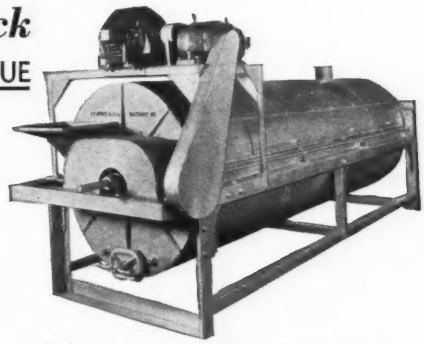

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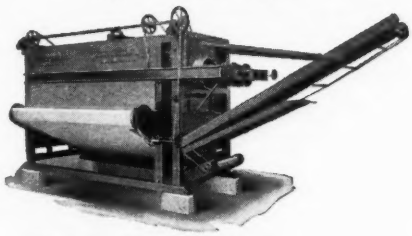

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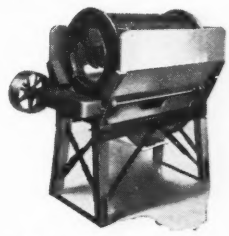

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